Development Centre Studies

Regional Integration and Internal Reforms in the Mediterranean Area

INTERNATIONAL DEVELOPMENT

OECD

By Sébastien Dessus and Akiko Suwa

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FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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Foreword

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Preface

Since the beginning of the 1990s, many developing countries have been pursuing a strategy of economic liberalisation by relying on their adherence to regional integration agreements. This choice is often justified by the idea that a regional integration arrangement can facilitate the implementation of necessary domestic reforms by realising "deeper integration" than trade agreements being carried out at the multilateral level. This facilitation of reforms depends largely on the nature of the commitments made by the countries to carry through with their integration. In this respect, the signing of partnership agreements between the European Union and the Southern Mediterranean countries is an initiative which should provide important lessons for decision makers in the OECD Member and non-member countries.

Four countries have already signed a partnership agreement with the European Union: Tunisia, Morocco, Israel and Jordan. Egypt has recently reached an agreement which is not yet signed. While obstacles remain, enforcing these agreements would increase the credibility of governments to liberalise their economy in the eyes of economic actors, both domestic and international.

This study examines the relative importance of domestic obstacles to regional integration that are inherent in many developing countries, including persistent fiscal deficits and labour market rigidities. By applying an economy-wide policy simulation model to two countries, Tunisia and Egypt, the authors demonstrate that successful regional integration requires maintaining macroeconomic equilibrium in the short term, and economic restructuring and investment promotion over the longer term.

The findings — which identify specific adjustments in each country — suggest that a key to the success of the regional integration process is a parallel implementation of domestic reforms on the part of developing countries, which is necessary to realise productivity gains associated with foreign trade and direct investment. Seen from this angle, the Euro-Mediterranean agreements are expected to play the role of "guarantor" for partner countries to implement domestic reforms. This is largely because of the Agreements' political provisions aimed at regional security and stability and their institutional and financial arrangements aimed at binding together both sides of the Mediterranean.

Jorge Braga de Macedo
President
OECD Development Centre
February 2000

Executive Summary

Since the late 1980s, most North African and Middle Eastern countries have carried out structural reform in two key areas: macroeconomic stabilisation and opening up to international trade (in particular, unilateral liberalisation, multilateral liberalisation commitments under the GATT/WTO, and regional integration initiatives). In terms of trade liberalisation, the most important regional initiative is the Euro-Mediterranean Partnership, launched in Barcelona in 1995. This designation covers a set of bilateral agreements between the European Union and Mediterranean partner countries, whose economic provisions aim to establish a free-trade area by the year 2010.

The Euro-Mediterranean Partnership: a Risky Endeavour ...

The risks associated with the partnership are not insignificant. First, the trade liberalisation involved is asymmetric: the Mediterranean partner countries have enjoyed preferential access to European markets since the 1970s, and the Euro-Mediterranean agreements provide for opening these countries' markets to European products in return. This asymmetry can lead to a deterioration of the trade balances of Mediterranean partner countries. It threatens industry that is already vulnerable and could destroy jobs in the least competitive sectors. The loss of tariff revenue can be a heavy drain on the budgets of countries that depend heavily on such revenue. Second, the Euro-Mediterranean agreements are incomplete. As they are by definition preferential agreements, they can lead to trade diversion favouring the European Union over other trade partners of the Mediterranean partner countries. Their bilateral character can also encourage investors to relocate productive activities to Europe and re-export their products to the Mediterranean partner countries. Finally, the liberalisation covers only industrial products; agriculture and services, which are promising export markets for the Mediterranean partner countries, are excluded for the time being.

Under these conditions, a partnership which takes the form of preferential tariff dismantling covering only industrial products has little chance of increasing the long-term well-being of the populations of the Mediterranean partner countries, and involves significant short-term costs.

The Euro-Mediterranean agreements, however, commit the signatories to more than this simple trade agreement. Politically, the agreements guarantee regional security and stability. A financial aid programme will serve to reduce the costs of transition and modernise the productive system. The administrative and technological co-operation provided for by these agreements should facilitate trade by harmonising commercial practices and standards in different countries

...in a Changing Environment

The risks related to the Euro-Mediterranean agreements should be put into perspective by viewing them in the context of structural adjustment. As these agreements go beyond trade alone, they can make a significant contribution to successful adjustment, as shown by an examination of the long-term situation in Tunisia and Egypt. Admittedly, Tunisia which has already begun the integration process, has seen a rise in its balance-of-trade deficit, but this has clearly not been caused by the Euro-Mediterranean agreement alone. Similarly, although overprotection of services is anticipated sooner or later after the agreement comes into force, it will remain limited and cannot be compared to the overprotection of agriculture, which results from the intrinsic orientation of Tunisia's agricultural policy. Egypt will experience more trade diversion to Europe than will Tunisia because it begins with a greater diversity of trading partners, but also because its rent-seeking economy hampers commercial dynamism. The budgets of countries having the closest trade links to the European Union certainly could suffer from tariff dismantling, but that is because their fiscal systems are too heavily dependent on customs receipts.

In sum, opening up to the European Union does no more than reveal the existing structural weakness of the Mediterranean economies: continued rent-seeking, market segmentation, a weak modern private sector and inadequate fiscal systems.

The Euro-Mediterranean Association Agreements Can Support the Structural Adjustments Under Way in the South Mediterranean Countries

The success of regional integration depends on the domestic policies adopted to support it, and notably on the further pursuit of structural adjustment. The first type of reform needed is the continuation of efforts to achieve macroeconomic stabilisation and to reorient the economy towards exports. Egypt and Tunisia seem to have only a limited capacity for an export supply response. Egypt is still burdened by a structural overvaluation of its exchange rate. The major challenge facing this country is diversifying production to provide for the drying up of its traditional rents. Tunisia has a more diversified export industry, but its domestic policies in some sectors, especially agriculture, hamper export growth. The partnership can increase these economies' ability to respond to the liberalisation in several respects: first, because it

can limit the social cost of industrial restructuring through financial transfers; second, because it seems to offer strong incentives for producers to diversify; and finally, because it can secure new markets for key sectors such as textiles.

There are two possible types of solutions for dealing with the fiscal deficit. One is to reorient the fiscal system to make it less dependent on external sources. An examination of the problem in Tunisia shows that increasing direct taxation (with an enlargement of the tax base) presents more advantages in terms of efficiency and equity than does an increase in the indirect tax burden. Harmonisation of VAT, a solution which is often mentioned, does not seem to lead to significant efficiency gains. Gains from harmonisation can be observed only when other types of taxes or special subsidies (for consumption and production of essential goods) are also integrated into this process. Cutting subsidies should in fact be regarded as a measure to reduce fiscal expenditure, which constitutes the second type of solution for offsetting a fall in tariff receipts. In Tunisia, however, reducing consumption and production subsidies without compensatory measures could hit rural households very hard. The Euro-Mediterranean Partnership can facilitate this reform if, in the agricultural negotiations provided for in the association agreements, the European Union agrees to reduce its barriers to the entry of Mediterranean products. In this case, agricultural liberalisation could provide a partial solution to the question of compensatory fiscal policy. A second possible way to reduce fiscal expenditure would be privatisation, which would permanently reduce government transfers to public enterprises. Privatisation programmes have encountered considerable difficulties, however, especially because of a lack of available national savings. Thus a solution would involve external financing of privatisation, which once again underlines the constructive interaction between domestic and external liberalisation, and the role which the Euro-Mediterranean agreements could play in facilitating domestic reforms.

The reform of factor markets is the second type of supporting measure essential to external liberalisation. Continued liberalisation of the financial sector should increase its capacity to mobilise savings, as well as the allocative efficiency of the capital market. Probably more important is the economies' ability to take advantage of trade liberalisation to develop labour-intensive industry. The analyses on this subject for Egypt indicate that without a major labour market reform, the country could benefit only slightly from the potential offered by liberalisation. As the proportion of manufacturing jobs in industry is low, a Euro-Mediterranean agreement limited only to this sector cannot serve as a motor for job creation. This will require attaining a high growth rate and acting simultaneously in all sectors; otherwise, Egypt would not have an adequate labour supply available in the sectors where it could demonstrate a comparative advantage, which seem to be fairly labour-intensive. If Egypt carries out a labour market reform in parallel with the Euro-Mediterranean agreement, it will be able to adopt industrial technology more favourable to job creation. In the short term, reform of its labour market would involve harmonising public and private sector rules of wage determination, and in return providing a guarantee of broader access to the modern private sector for population groups which suffer from discrimination (women).

Conversely, the Euro-Mediterranean agreement would reduce the resistance to labour market reform because the social categories affected by the reform would benefit in other respects from liberalisation. Once again, the complementarity between external and domestic reforms is worth emphasising.

The third type of reforms involves liberalisation of sectors which are not covered by the present provisions of the association agreements: services and agriculture. In Tunisia, effective protection of services should increase after the association agreement is implemented, which could further decrease the potential for trade and investment. This potential is already limited by the state of the country's communication, transportation and insurance services, which are inadequate for the development of modern international trade. An increase in effective protection of these sectors would make their subsequent liberalisation more difficult. The same reasoning applies to agriculture, although the predictable increase in effective agricultural protection is not a consequence of the association agreement: if liberalisation of the agricultural sector is considered in the future, it is likely to encounter much greater resistance since the reform will occur belatedly. From this standpoint, the European Union's support is essential. By taking prompt action to grant broader access for Tunisian agricultural exports within the framework of the association agreement, the EU would greatly facilitate agricultural liberalisation. Moreover, this would not entail a loss for the EU, because its exports to Tunisia would clearly increase after Tunisian agricultural liberalisation. Furthermore, policy anchoring to the European Union through the Euro-Mediterranean agreement would undermine the very foundation of Tunisia's past agricultural policy, namely the search for food self-sufficiency.

From Stabilisation to Growth

By realising all the potential of the Euro-Mediterranean agreements, the Mediterranean countries could bring about structural change in their growth rates and increase the export and job content of growth. A key to long-term success lies in the productivity gains associated with trade. Such gains can be due to a greater availability of imported inputs that improve the quality of finished products. For Egypt, productivity gains are linked to imports of manufactured goods — precisely the products covered by the Euro-Mediterranean agreement. This argues in favour of the pursuit of deep integration with Europe, which is Egypt's main source of imported manufactured goods.

The potential for foreign direct investment linked to this agreement is also important. If technology transfers occur, the return on capital invested in the Southern countries will increase appreciably. This increased return, together with the greater institutional and political stability associated with the partnership, could increase the yield-risk ratio of capital and strengthen incentives for foreign investors to take advantage of the new investment opportunities.

Moreover, the European Union is supporting the effort to improve technology and quality by contributing to industrial modernisation programmes. The provisions for administrative and technological co-operation contained in the Euro-Mediterranean agreements can also help to reduce unofficial trade barriers by harmonising trade practices and standards. In this respect, the Euro-Mediterranean agreements can achieve "deep integration" of the two shores of the Mediterranean.

The pursuit of a regional integration strategy requires the simultaneous implementation of domestic reforms, in order to maximise the potential for success. In this sense, the regional strategy is a necessary but not a sufficient condition for development. But the regional approach does more than other approaches to encourage and facilitate the implementation of these essential domestic reforms, and thus to make them credible. That is why it constitutes a viable opportunity for development.

Introduction

The Euro-Mediterranean Partnership, initiated by the Barcelona Declaration of November 1995, reflects the desire of the affiliated states to create the world's largest free-trade area[1]. By signing bilateral association agreements with the Mediterranean countries, the European Union wants to link the economic and political dimensions of integration. In this respect, its approach is similar to that followed in European construction, although there is no intention of bringing the Mediterranean countries into the Union. This approach consists in economic liberalisation and the strengthening of market mechanisms, with due attention to preserving social equilibrium and encouraging the convergence of the economies. Thus the liberalisation of the South Mediterranean economies and their incorporation in the single market are to be carried out gradually and in a manner suited to each economy, and will be supported by financial and technical assistance programmes to facilitate the transition and encourage modernisation. More generally, these agreements embody a broad concept of partnership since they also include a considerable political and cultural dimension. This should eventually lead to greater stability and co-operation in the Mediterranean, thereby linking the destinies of the region's peoples more harmoniously, as is occurring within the European Community.

This regional approach has been widely criticised on purely economic grounds. Since the early 1990s, however, many developing countries have chosen economic liberalisation based on regional agreements. This choice seems to be justified by the special effectiveness of the regional approach in facilitating implementation of necessary domestic reforms, through the anchoring of the developing country to an industrialised area. As such, it seems that the Euro-Mediterranean Partnership agreements stand above the traditional division between regionalism and multilateralism, and offer more guarantees of success than the non-preferential approach, precisely because they are more comprehensive than simple bilateral trade agreements. Several reasons are generally given to support this assertion. The signing of these agreements should strengthen the credibility of governments' liberalisation efforts in the eyes of economic agents and should favourably influence the latter's expectations; extensive integration of the two shores of the Mediterranean could increase the security of trade, create new channels of North-South and South-South trade and investment, and encourage technology transfers.

All these hypotheses have yet to be proven, however, and they will largely depend on the nature of the domestic policies that the countries adopt to support the integration process. This study expressly tries to identify the domestic reforms which would maximise the chances of successful integration, and to determine to what extent their implementation could itself be facilitated by the Euro-Mediterranean Partnership.

We therefore decided to study the national, or domestic, dimension of the regional integration process. This choice may at first seem paradoxical, but it is nothing of the sort. By offering a similar form of integration to countries whose economic structures differ appreciably, the partnership agreements actually require that each economy make its own specific adjustment. In the short term, these adjustments will affect the tax system, the balance of payments and the labour market in particular. In the longer term, the process of regional integration will have a direct impact on the capacity to restructure economic activities, mobilisation of savings, investment and technological progress; and the extent to which the integration is successful will, in the last analysis, depend on the progress made in these spheres.

These questions have been tackled using an integrated analytical approach based on a general equilibrium model. We consider that the model's dynamic character and its ability to provide a detailed and consistent representation of gradual trade liberalisation make it especially suitable for studying the impact of regional integration in two countries: Egypt and Tunisia. These two cases encompass many of the characteristics of the South Mediterranean area and the problems it confronts. As of April 1999, Tunisia was the only country where an association agreement had actually come into force. Egypt's size and political influence make it a major actor in the area, and it represents a "critical mass" necessary to the success of the Barcelona process as a whole. Egypt announced in June 1999 that after seven years of negotiations it had finally reached an agreement with the European Union, and thus was prepared to sign a partnership agreement[2].

Chapter 1 provides a theoretical view of the stakes involved in the Euro-Mediterranean Partnership for the countries of the South. After reviewing the contents of the partnership agreements, it presents the arguments for and against a regional approach. This division largely reflects how much importance is attached to the dynamic effects rather than the static effects of the regional strategy.

Chapter 2 presents the characteristics of the South Mediterranean area as a whole and stresses the diversity of its economies. A multi-country model is used to check on the feasibility of the analyses to be undertaken afterwards separately for Egypt and Tunisia. The initial analyses show that the problems of integration are different for the two countries and would not entail the same domestic support strategies. For example, it seems that Tunisia should be primarily concerned about which product categories are to be covered by liberalisation, as well as the question of fiscal compensation, while in Egypt it is the choice of geographical coverage which seems to be the more sensitive issue.

Chapter 3 addresses the question of the transition in Tunisia. A review of the country's recent experience highlights the complementary nature of the external and domestic reforms. We subsequently study two issues relating to the transition: the risk of overprotection of certain sectors and the question of fiscal compensation. Lastly, we consider the extension of the agreement to agriculture. Our results suggest that it would be in Tunisia's best interest to profit from being anchored to the European Union to abandon its food self-sufficiency policy, if in return it obtained elimination of the quotas applied to its agricultural exports by its European partner.

Chapter 4 attempts to measure the partnership's impact on growth and additional employment in Egypt. The simulations indicate that if the partnership were accompanied by technology transfers — whose potential is emphasised by an econometric study — then Egypt could enjoy higher growth and investment rates and could limit the social costs of the massive economic restructuring made necessary by the exhaustion of its traditional rents. The second section of this chapter looks at the reforms in labour law which Egypt could carry out to accompany the liberalisation. Our results suggest that in the absence of major labour market reform, Egypt would benefit only moderately from the growth potential contained in the partnership agreement. They also suggest, however, that this agreement could itself increase the political feasibility of reform — a result that once again emphasises the complementarity of domestic and external liberalisation measures.

The conclusion summarises the lessons of this study and presents the policy recommendations which follow from them.

Notes

1. This potential free-trade area currently embraces 27 countries: Algeria, Austria, Belgium, Cyprus, Denmark, Egypt, Finland, France, Germany, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Luxembourg, Malta, Morocco, the Netherlands, the Palestinian Authority, Portugal, Spain, Sweden, Syria, Tunisia, Turkey and the United Kingdom.

2. *Financial Times*, 8 June 1999.

Chapter 1

The Euro-Mediterranean Partnership from the Viewpoint of the Southern Countries

This chapter presents the main parameters of the debate on Euro-Mediterranean regional integration, focusing on long-term issues. It thus deals with the partnership's prospective advantages in terms of growth and competitiveness, once free trade becomes fully operative. As will be seen, however, the partnership agreements provide for a 12-year intermediate period. This transitional period raises specific problems, such as the cost of redeploying the factors of production, modernising the industrial fabric and compensating for the loss of tariff revenue on imports from Europe.

After a review of the historical background of the Barcelona process and the provisions of the Euro-Mediterranean agreements, the bulk of the chapter examines the expected static and dynamic effects which contribute to making the Euro-Mediterranean agreements a form of "open regionalism" compatible with the other trade liberalisation processes at work in Arab countries.

The Historical Background and Content of the Euro-Mediterranean Agreements

Association agreements constitute the central element of the Euro-Mediterranean Partnership launched at the Barcelona Conference in November 1995. These association agreements replace both the co-operation agreements of the 1970s and the adaptation agreements which were signed as from 1988 to compensate for the erosion of the preferential arrangements for the Maghreb countries due to the accession of Spain and Portugal to the EC[1].

The partnership is being implemented through a system of bilateral regionalism. That is, each association agreement actually links the European Communities and their member states, as a body, with one Mediterranean country. An alternative process would have involved an overall agreement instituting a single economic area for all the member states. The bilateral path adopted permits a pragmatic approach in which

the provisions of each agreement are tailored to the specific partner country and each country progresses at its own rate. It also leads to a dynamic domino effect (de Melo and Grether, 1997): as regional integration advances, non-member countries run an increasing risk of marginalisation, and thus have more incentive to sign an agreement[2].

Nine of the 12 Mediterranean partner countries are at some stage of the association agreement process, while the others — Turkey, Cyprus and Malta — are on the road to forming customs unions with the European Union (Table 1.1)[3]. Within the first group of nine countries, the agreement with Israel differs from the others in content because of Israel's level of development. Another special case, the Palestinian Authority, signed an interim agreement, because of its unusual status in the peace process.

Table 1.1. **Progress of Association Agreements**
(as of 30 July 1999)

Towards a customs union	
Turkey	Customs union in effect since 1966.
Cyprus	Agreement signed in 1978. Final stage of a customs union came into effect in 1998.
Malta	Agreement signed in 1970. First stage of a customs union has been in effect since 1977.
Interim agreements	
Palestinian Authority	Interim agreement signed 24 February 1997, went into effect 1 July 1997. Negotiations for an association agreement were supposed to have begun in May 1999.
Israel	Co-operation agreement (1975), with reciprocity, free trade (1988) and association agreement signed 20 November 1995.
Association agreements	
Tunisia	Association agreement signed in 1995, came into force 1 March 1999.
Morocco	Association agreement signed 26 February 1996, awaiting ratification by Italy and Belgium.
Jordan	Association agreement signed 24 November 1997. Not yet ratified by any state.
Egypt	Reached an association agreement 30 July 1999, not signed.
Algeria	Negotiations authorised in 1996.
Lebanon	Negotiations under way.
Syria	Beginning of negotiations (May 1998).

In the past, the co-operation agreements offered Mediterranean products preferential access to European markets. These agreements were restricted to the commercial, economic and financial spheres, and provided for no compensating access to Mediterranean markets for European products. The Euro-Mediterranean Partnership lays a new foundation for relations between Europe and the South Mediterranean by stipulating reciprocity of preferences — in accordance with the GATT — and by adopting an overall perspective, with the long-term objective of establishing the world's largest free-trade area. The partnership also has a political dimension. Respect for human rights and democratic principles is an essential element, violation of which can lead to suspension of the agreement. A regular political dialogue has been established, to work for the consolidation of security and stability in the Mediterranean region and to allow for joint initiatives. Two institutions were created to support this political dimension: an Association Council, endowed with decision-making power, which meets

at the ministerial level once a year, and an Association Committee of senior officials, which is responsible for monitoring the agreement. The dispute settlement body is the Association Council, which can appoint arbitrators if necessary.

The trade provisions of the Euro-Mediterranean association agreements aim at creating a free-trade area. If the different types of regional integration are ranked, a free-trade area, where each partner retains an independent trade policy *vis-à-vis* non-member countries, is at the bottom of the scale (de Melo and Grether, 1997). Next comes a customs union (such as that planned between the European Union and Turkey), which has a common external customs tariff. The next type, a common market, is a customs union with the addition of the "four fundamental freedoms": free movement of goods, individuals, capital and services. Still higher on the integration scale is a single market, in which standards and regulations are harmonised. The top of the scale is an economic union, where economic policy decisions are co-ordinated. The Euro-Mediterranean agreements will lead to more than a simple free-trade area, because they provide for the harmonisation of standards and free movement of capital and services.

The partnership does not provide for the fourth fundamental freedom (free movement of individuals), but the Euro-Mediterranean agreements do affirm the principle of non-discrimination towards expatriate workers from member states, with regard to working conditions, social security and transfer of pensions. A regular social dialogue by means of co-operation programmes is planned, with the main purpose of reducing migratory pressure, which will probably remain high until 2010 because of the dissymmetry of demographic trends on the two sides of the Mediterranean (OECD, 1998).

Where industrial products are concerned, the trade provisions of the Euro-Mediterranean agreements institute reciprocity for the concessions which had previously been granted unilaterally to the Mediterranean countries by the European Union. Free trade will be implemented gradually during a 12-year transitional period (the maximum authorised under WTO rules). During this period, safeguard clauses will provide for protection of infant industries or prevention of a balance-of-payments crisis. Industrial goods will be liberalised gradually but not uniformly. Tariff reduction will begin upstream in the productive process and proceed downstream, and initially will apply to imported goods having no local competitors. Final consumer goods will be liberalised in the last stage of tariff dismantling. The timetable for phasing tariffs out is negotiated in detail and differs for each partner country.

Agricultural products remain subject to import-export quotas. A clause provides for re-examining the situation five years after the agreement is signed. The parties may also make reciprocal concessions on a case-by-case basis. Liberalisation of the services sector, which is included in the agreement, follows WTO rules concerning the right of establishment and supply of services. The degree to which liberalisation of services has been implemented will be examined five years after the agreement comes into force.

The Euro-Mediterranean agreements stipulate that the parties make all payments in a freely convertible currency. In order to encourage investment, they guarantee freedom of movement for capital associated with direct investments, as well as providing for the liquidation and repatriation of profits. The agreement reaffirms the principles of free competition and intellectual property rights, and provides that the Association Council will adopt the necessary regulations within five years of the agreement's entry into force. The use of European certification standards and procedures is encouraged, and liberalisation of government procurement is set as an objective.

Co-operation is financed by the MEDA programme (4.68 billion ecus for 1995-99) and European Investment Bank loans (3.9 billion ecus for 1995-99). These funds are to be used respectively for macroeconomic support and for reforms to modernise the economy and social programmes.

According to Winters[4], the provisions of the Euro-Mediterranean agreements reflect Europe's desire for "controlled liberalism", that is, market opening accompanied by efforts to cushion the shock of liberalisation.

The Domestic Effects of the Euro-Mediterranean Agreements

The content of these agreements places them in the category of preferential regional agreements, which introduce discrimination between trade partners, as opposed to unilateral or multilateral liberalisation, which grants most-favoured-nation status to every participant. Owing to the distortion caused by discrimination between partners, the preferential approach yields a smaller gain than uniform (non-discriminatory) liberalisation. This consideration is fundamental to the traditional static theory of preferential agreements. In the 1980s, however, the majority of trade agreements were preferential in character (Pomfret, 1986). If preferential agreements are so widespread in practice, they undoubtedly offer dynamic advantages not captured by traditional theory, in terms of credibility and anchoring of policies (Stern, 1999).

Static Effects

Static effects stem from tariff reduction. Traditional analysis of preferential agreements is based on Viner's (1950) theory of trade creation/diversion. Viner explains that the evaluation of a free-trade area must depend on the structure of production before the agreement is implemented. The reason for this is that tariff reduction will make imports from the partner country of the preferential agreement more attractive. Assume that countries A and B sign a preferential agreement, to the detriment of country C, left out of the agreement. If country A had a more competitive cost structure than the others before the agreement, but was penalised by excessive customs duties, the preferential agreement directs purchases towards the most efficient producer; there is trade creation and well-being increases. In other words, the consumer in B will no longer buy local goods but will buy less expensive goods imported from A. If, on the

contrary, country C was more competitive before the agreement, tariff preference will take away its market to the benefit of A; there is trade diversion and well-being decreases. The net effect must be examined case by case. Thus one cannot generalise about the results, which is typical of a second-best situation. Nonetheless, the benefit will be more significant if: *i)* the tariff was high before the agreement (or included quantitative restrictions eliminated by the agreement); *ii)* the tariffs adopted for third countries after the agreement are relatively low; *iii)* the countries participating in the agreement have complementary import-demand structures (de Melo, Panagariya and Rodrik, 1992). The effects on the productive structure take the form of factor reallocation: industries competing with imports decline, and the factors previously employed in these industries are reallocated to other activities. Given the structure of imports from the EU (see Chapter 2), tariff reduction will probably be focused on intermediate and capital goods, thus reducing investment and production costs.

In some well-defined sectors, potential gains from economies of scale can amplify the agreement's static effects: a larger market can increase the profits of oligopolistic firms, and thus their output (scale effect). In contrast, sharper competition by foreign competitors may push firms to decrease their margins (competitive effect of trade), and even drive the least profitable out of business. This rationalisation improves the sector's total productivity (Baldwin and Venables, 1995). Moreover, if the integrated area is sufficiently large, a fall in its demand for goods from third countries can decrease the prices of such goods; in this case, the terms of trade of the countries participating in the preferential agreement will improve with respect to third countries.

Dynamic Effects

The key to the success of the Euro-Mediterranean agreements lies in the possibility of dynamic effects. Through trade in goods, the partners also trade "something else": know-how, institutions, political authority. Moreover, the signature of agreements can give rise to some questioning of existing institutions, which can result in making them more effective (de Melo, Panagariya and Rodrik, 1992). These dynamic effects depend on the preferential and asymmetrical aspects of the agreements, which closely link the Southern countries to a more developed partner. Some effects work through identifiable channels such as foreign direct investment or trade in goods itself. Other, less easily quantifiable effects stem from increased credibility and improved market access through regulatory harmonisation.

One hoped-for dynamic effect of regional integration agreements is an inflow of foreign direct investment (FDI). Such inflows can be beneficial in several respects: foreign firms bring capital, technology and knowledge of markets. Yet the Euro-Mediterranean agreements have not led to substantial inflows of FDI, neither when the Barcelona process was announced, nor, in the case of Tunisia, when the association agreement came into force. According to Lahouel (1999), the traditional aim of FDI in the Mediterranean countries has been to exploit natural resources or to circumvent tariff barriers; under the Euro-Mediterranean agreements, however, the latter objective

has become less important. In the case of Tunisia, institutional obstacles and the slowness of the privatisation programme may also be blamed (Bechri, 1999). In general, FDI depends on considerations relating to the medium-term viability of the business climate: the presence of appropriate institutions, political stability and the extent of corruption. Another characteristic of the Euro-Mediterranean agreements — their bilateral structure based on the European Union — could increase incentives to invest in Europe in order to reach the markets of the South (see below).

Trade-related technology transfers work through various channels: imported inputs raise the quality of finished products and transmit know-how; direct investments spread new technology; and export promotion requires improvement in the quality of export goods. Chapter 4 presents an estimate of this effect for Egypt.

The Euro-Mediterranean agreements can serve as a signal of a Mediterranean country's determination to liberalise. This can be significant for countries which have a history of protectionism or of unsuccessful attempts at trade liberalisation[5]. This signal to the private sector is all the stronger since the country's admission to the preferential area has a heavy cost in terms of negotiating time and legislative changes[6].

Moreover, by entering into an agreement with a large foreign partner a government "ties its hands" and prevents itself from retracting the tariff reduction in the future (Fernández and Portes, 1998). A regional agreement can do more to strengthen credibility than an agreement under the WTO, because the danger of retaliation in the event the open-door policy is abandoned is stronger in the case of a clearly identified partner than in a diffuse multilateral framework. Under the regional framework, partner governments can invoke the external constraint embodied in the Euro-Mediterranean agreements to counter opposition from domestic pressure groups. Moreover, these pressure groups are henceforth operating in a much broader context and lose some of their effectiveness (dilution of preferences).

In the Euro-Mediterranean agreements, the suspensive clause linked to respect for democracy helps to anchor the overall policy framework of a Southern country and lead it towards convergence with Europe. More specifically, the clauses on competition are intended to guide domestic reforms in this area. These clauses deal with control over public aid, the operations of state monopolies and public enterprises, and the liberalisation of public procurement markets.

The provisions relating to competition law are not identical in all the Euro-Mediterranean agreements. For example, the agreements with Morocco and Tunisia (Commission of the European Communities, 1995*a* and 1995*b*) make explicit reference to prevailing EU competition law, whereas the agreement with Israel leaves more leeway for Israel to draw up its own rules (Togan, 1998). In addition, incentives to carry out domestic reforms are less clear during the transitional "grace period".

A preferential agreement between two partners of unequal size can also provide a measure of "insurance" for the small country: for example, the large country could commit itself not to introduce protectionist quotas or take retaliatory action if the small country devalues (Fernández and Portes, 1998). The Euro-Mediterranean

agreements do not exploit this possibility, however, but simply recognise that each member of the partnership (and not only the larger member) has the right to take anti-dumping measures, on condition that these measures conform to WTO rules. Thus, any insurance provided by the agreements will stem rather from harmonisation of rules and market access.

Harmonisation of regulations in the Euro-Mediterranean area can encourage trade. These regulations deal with subjects as diverse as consumer health and safety, certification systems, customs procedures, competition laws, technical rules and environmental standards. In practice, these rules often function as trade barriers, even if that was not their initial purpose. There are several possible ways of handling the differences in rules from one country to another: total deregulation, mutual recognition based on a requisite minimum, or harmonisation of rules (Hoekman, Konan and Maskus, 1998). Under the last method, either the partners discuss matters case by case, or the small country adopts all of the rules used by its larger partner. The central and eastern European countries chose the latter option in their agreements with the EU and adopted the Community *acquis*. The Euro-Mediterranean agreements provide for co-operation in order to conclude mutual recognition agreements. By offering a framework for intergovernmental discussion, the preferential route can prove more effective for harmonising rules than a multilateral approach (Hoekman and Konan, 1999). Thus a preferential system permits deep integration. Table 1.2 compares the principal characteristics of the two types of integration.

Table 1.2. **Shallow and Deep Integration**

Shallow Integration	Deep Integration
The agreement is mainly concerned with reducing tariffs and ending quotas. Rules are determined at the level of each country, with the foreign country being accorded non-discriminatory treatment.	The agreement has a broader scope than simply lifting tariff barriers and quotas. There are common rules for the members of a region.

The dynamic effects are of course interdependent. For example, increased credibility affects the possibility of FDI inflows. If a Southern government undertakes infrastructure projects intended to facilitate investment, it will more easily find foreign lenders if its long-term objective seems credible. Similarly, harmonisation of standards is a response to the risk of strengthening the centre at the expense of the periphery: the "hub-and-spoke effect", to which we now turn.

Risk of the "Hub-and-Spoke" Effect

The Euro-Mediterranean agreements can lead to unequal distribution of the benefits of liberalisation within the free-trade area. By signing bilateral agreements with Morocco and Tunisia, the European Union might reap most of the benefits of trade creation. To be sure, all trade between the EU and its partners will be free, but if Morocco and Tunisia maintain tariff barriers between themselves, they will

experience trade diversion. A similar effect can occur with regard to investments: there would be concentration within the European Union (the hub, or centre) to the detriment of the Mediterranean countries (the spokes, or periphery), since tariff reduction has removed the main motivation for FDI in the latter (i.e. to circumvent protectionist barriers). It is thus more attractive for an investor to settle in Europe and export to each Mediterranean partner country.

Two characteristics of the Euro-Mediterranean agreements could give rise to a hub-and-spoke effect: their bilateral nature and the definition of rules of origin. Rules of origin determine whether a product can be regarded as originating in the free-trade area and as such can be entitled to preferential treatment[7]. The product must be entirely produced on the national territory of the partner country, or have undergone sufficient transformation there. In the latter case, two criteria are used (alone or jointly) in the protocols annexed to the agreements: *i)* local content must be greater than 50 to 60 per cent of value added; *ii)* the finished product must be classified under a tariff heading different from its inputs. Largely as a consequence of this very detailed specification, the definition of rules of origin is often not neutral. On this question, de Melo and Grether (1997) note that if a free-trade area does not adopt a common external tariff with respect to third countries, it becomes favourable ground for protectionist use of rules of origin by a producer of the partner country. The producer will be tempted to press for very strict rules of origin, if its preferential tariff gains exceed its cost disadvantage relative to a producer outside the free-trade area.

The risk of the hub-and-spoke effect can be countered by cumulation of rules of origin, which is this field's equivalent to mutual recognition of standards. Investors can then locate in any country belonging to the free-trade area and enjoy reduced customs duty for all their exports within the area. Under the Euro-Mediterranean agreements, gradual implementation of partial cumulation (or enlarged bilateral or diagonal cumulation) is planned.

Partial cumulation applies to final goods which are produced using products "originating" — as defined in the protocols — in partner countries[8]. The Maghreb countries already meet the conditions for implementing partial cumulation: *i)* in the agreements with the European Union, each Maghreb country adopted the same definition of rules of origin; and *ii)* in a bilateral treaty, Morocco and Tunisia granted each other the same treatment that each gives to Europe. The next step would be for the European Union, Morocco and Tunisia to recognise one another's right of cumulation. This would require effective monitoring systems. The Euro-Mediterranean agreements, however, do not provide for a supranational monitoring authority; rather, they base compliance with rules of origin on co-operation between customs administrations and, in practice, on the goodwill of the member states. Thus the extension of partial cumulation implies equivalent administrative capability in all the countries and mutual trust.

Ultimately, it will be possible for partial cumulation to be extended to all the countries associated with the European Union: the central and eastern European countries and the Mediterranean countries. In practice, certain problems still have to be resolved. First, rules of origin are not always the same, for example between Egypt, Morocco

and Turkey. Second, there is the question of treating re-exported imports. Some European countries would like to extend the non-drawback rule, which is already used by Israel and the central and eastern European countries: these countries pay duty on the share of inputs from third countries in their products. However, the exemption of imported inputs from customs duties has been a common export-promotion policy (in Tunisia, for example).

The Role of Euro-Mediterranean Agreements in the Liberalisation Process: for an Open Regionalism

The countries of the South Mediterranean are engaged in liberalising trade under a number of arrangements: the GATT, regional agreements (with the European Union, within the Arab League[9] or between African countries) and bilateral agreements. For example, Egypt, which has a bilateral agreement with Tunisia, is a party to the Arab League's free-trade agreement and has just negotiated a Euro-Mediterranean agreement with the EU. Moreover, the structural reform corresponding to the choice of an open door is in line with the macroeconomic stabilisation efforts conducted since the 1980s.

What role can the agreements with the European Union play in this context? Initially, the Euro-Mediterranean agreements can support the domestic reforms needed to prepare a country for opening up, since these agreements cover much more than free trade. Their aim is to achieve deep integration, with harmonisation of the rules and practices facilitating trade, supported by technical and administrative co-operation. Moreover, financial co-operation can bear part of the costs of transition.

Second, the agreements can generate a dynamic favourable to liberalisation, paradoxically, through the concerns they may provoke. We saw above that a preferential agreement can encourage peripheral partner countries to grant each other the preferential treatment that they reserve for countries of the centre, while countries which, for one reason or another, have remained outside the process will be tempted to join the partnership to benefit from deep integration. In this respect, Devlin and Page (1999) stress that the Arab League's free-trade agreement will need to be developed, so that countries involved in this agreement but not in the Barcelona process (like the Gulf states) will not be losers. According to these authors, the Arab free-trade agreement should be extended to agriculture and services, instead of being restricted to industry, and it should adopt rules compatible with the Euro-Mediterranean agreements.

The Euro-Mediterranean agreements can serve as a guarantor of domestic reforms, because of their political provisions and also in view of the extremely complex institutional process associated with these agreements, which bind countries for an unlimited period. Furthermore, some provisions of the agreements — notably those dealing with competition and the simplification of customs procedures (introduction of a single document for customs clearance) — have direct repercussions on the countries of the South. Here again a distinction should be drawn between rules whose

harmonisation could benefit all trade partners (whether or not they are in the Euro-Mediterranean free-trade area) of the Southern countries which sign the agreements, and other rules. For example, the introduction of a single document for the various customs clearance procedures would facilitate trade in general. Other types of new rules, however, could be difficult to extend to third countries, such as quality standards that are too restrictive, or the installation of a computer network linking the customs services of countries belonging to the free-trade area. In the case under discussion, mutual recognition based on minimal standards could be less discriminatory towards third countries than a true harmonisation modelled on European standards (Hoekman, Konan and Maskus, 1998). Moreover, in order to minimise the administrative costs of monitoring rules and new practices, especially for a developing country participating in several agreements, it would be judicious to adopt simple and mutually compatible standards.

A successful Euro-Mediterranean Partnership can give support to Southern countries that wish to conduct domestic reforms in order to have a market economy competitive on a world level. The Euro-Mediterranean agreements could then become an example of open regionalism[10], a first stage for partner countries leading to their participation in other free-trade agreements (either bilaterally, among themselves or with other partners such as the United States and Japan), in other regional trading blocs (the Arab League's free-trade agreement) or in a multilateral framework. This new regionalism — aimed at encouraging trade, based on market mechanisms and governed by the response of the private sector — contrasts with the attempts at South-South integration in the 1960s which, with little success, aimed primarily at establishing an autarkical zone, while preserving each member country's interests as much as possible (Galal and Hoekman, 1997).

Notes

1. See Fontagné and Péridy (1997) for a presentation of developments in the European Union's Mediterranean policy over the last two decades.

2. The bilateral approach has been adopted in most regional integration processes: EU, NAFTA and Mercosur.

3. The 12 Mediterranean partner countries do not form a contiguous geographical area, in particular because of the exclusion of Libya, which shares borders with Tunisia, Egypt and Algeria. The stagnation of the negotiations with Algeria also creates a continuity problem.

4. In de Melo and Panagariya (1992).

5. Devlin and Page (1999) recall that Arab countries' attempts at integration go back to the 1950s and that there are approximately 45 bilateral treaties between Arab countries.

6. Mexico provides the most striking example of how a regional agreement affects credibility. The anchoring of domestic reforms through negotiations with larger partners not very willing to grant concessions was central in the minds of the Mexican negotiators, according to Whalley (1996).

7. We are concerned here with preferential rules of origin. They should not be confused with rules of origin in ordinary law, which apply to anti-dumping measures and labelling.

8. Multilateral cumulation is not on the agenda, although this would allow all signatory countries to be considered a single territorial entity, sharing the various stages of production (for example, textile fibre in Egypt, yarn in Tunisia, fabric in Morocco, clothing in Italy).

9. In 1997, 18 Arab countries signed an executive programme to establish a free-trade area in ten years from 1 January 1998. The agreement provides for gradual tariff reduction (with a long negative list and excluding services) and also addresses non-tariff barriers. Safeguard clauses cover agriculture.

10. In its strict definition, open regionalism is incompatible with a preferential approach, which is by nature discriminatory (Fukasaku, 1995). In the Euro-Mediterranean case, however, this seems to call for qualification. If the Euro-Mediterranean agreements were to lead to domestic liberalisation, they could encourage the Mediterranean countries to start free-trade negotiations with other partners.

Chapter 2

The National Dimension of Regional Integration

An Identical Agreement for Similar Countries?

The Euro-Mediterranean association agreements between the European Union and Mediterranean partner countries were designed to be almost identical from one country to the next. A comparison of the agreements signed as of March 1999 did not reveal any major differences, and the European Union has clearly expressed its wish to establish the same sort of trade relations with each partner country. Consequently, the impact of the agreements depends primarily on the characteristics of each partner country's economy and on the accompanying reforms adopted. These economies have a number of common features, especially because of their geographical proximity and common cultural heritage. For example, most of them suffer from high population growth and a lack of water and soil resources. They also display substantial differences, however, in development level and wealth, in the structure of trade and production, and in their capacity for economic adjustment. These differences will largely determine the nature and scale of the effects of regional integration.

Wealth, Development and Modernisation

The Mediterranean partner countries are at very different levels of development. These should not be confused with their levels of wealth, because some still enjoy substantial rents. Under these circumstances, per capita income is not necessarily representative of an economy's level of industrialisation, modernisation and dynamism, which largely determine the nature and evolution of goods produced and traded by that economy[1].

Table 2.1 presents several wealth and development indicators for each of the 12 Mediterranean partner countries. It shows that the region falls naturally into three relatively homogeneous groups: a first group consisting of Cyprus, Israel and Malta, whose level of development is similar to that of the Mediterranean countries which

are members of the EU; a second group, which consists only of the territories controlled by the Palestinian Authority; and a third group, made up of the Mediterranean Arab countries and Turkey.

Table 2.1. **Recent Indicators of Wealth and Development**

	Population	Income/cap.	Growth	HDI	Education	Inf. mort.
Cyprus	0.7	20 490	3.8	0.913	0.89	8
Israel	5.5	18 100	2.1	0.913	0.88	8
Malta	0.4	13 870	3.5	0.899	0.86	9
Lebanon	3.0	6 060		0.796	0.86	32
Turkey	60.8	6 060	2.1	0.770	0.75	48
Algeria	28.1	4 620	-1.0	0.746	0.63	34
Tunisia	9.0	4 550	0.9	0.744	0.67	39
Jordan	5.4	3 570	-1.0	0.729	0.80	31
Morocco	26.5	3 320	1.0	0.557	0.45	55
Syria	14.2	3 020	0.2	0.749	0.68	32
Egypt	62.1	2 860	2.9	0.612	0.57	56
West Bank, Gaza	2.1	653*				

Sources: UNDP (1998) and World Bank (1998*b*).

Notes: The population is expressed in millions of inhabitants in 1996. Per capita income is given in current international dollars at 1996 purchasing power parity, except for the West Bank and Gaza (*), for which it is given in current dollars. Growth: Growth of per capita income (in current international dollars at purchasing power parity) between 1980 and 1996. HDI: the UNDP human development index (between 0 and 1) for 1995. Education: the UNDP education index for 1995. Inf. mort.: infant mortality rate per 1 000 births in 1995.

We will devote most of our attention to the last group, which contains 96 per cent of the region's population. The other two groups display too many special features — in terms of size, economic conditions and diplomatic relations with the European Union countries — to be regarded as representative of the region or analysed for the purpose of drawing general conclusions about the process of Euro-Mediterranean integration.

There are also substantial disparities within the third group. Although Egypt, Morocco, Syria and Jordan have per capita incomes of the same order of magnitude, they display very different levels of human development, largely because of their different levels of education and health spending. These differences are also found within the sub-group of the richest countries, Algeria, Tunisia, Lebanon and Turkey. Algeria has a very sluggish economy and a particularly low educational level for a country of its wealth, which is partly based on the exploitation of oil and gas resources. Its neighbour Tunisia is more dynamic, as attested by the average growth of its per capita income since 1980. On a per capita basis, Lebanon and Turkey are the two richest countries in this group.

Other indicators give an idea of the degree of modernisation of these economies (Table 2.2). Algeria and, to a lesser extent, Syria still derive a large share of their incomes from mining industries. Apart from petroleum, the manufacturing industries of these two countries are not internationally competitive. Syria's economy, like that of Morocco, is still highly dependent on agriculture. Egypt and Jordan are slightly

more industrialised. Tunisia and Turkey are the two most industrialised of the group, and the most competitive internationally in the manufactured goods sector. Lebanon is especially focused on services, trade and finance, and like Turkey, it has infrastructure corresponding to its wealth.

Table 2.2. **Industrial Structure and Degree of Modernisation**

	Agriculture/ GDP (%)	Mining/ GDP (%)	Industry/ GDP (%)	Labour productivity	Manufactured exports (%)	Telecom/ inhabitant
Algeria	10.4	26.7	10.2	1.0	3.7	44
Egypt	15.6	6.5	16.1	1.1	40.4	50
Jordan	4.5	3.0	13.4	2.4	48.7	60
Lebanon	7.8	0.0	9.1	na	na	149
Morocco	20.4	1.7	16.9	1.9	51.4	45
Syria	27.1	10.4	8.0	10.1	9.2	82
Tunisia	13.6	3.6	18.2	3.0	79.4	64
Turkey	16.0	0.0	14.0	5.6	74.4	224

Sources: ERF (1998) and World Bank (1998*b*).

Notes: The sectoral shares in GDP are calculated for 1995. Productivity: Relative index of average labour productivity in 1995, from data on manufactured output per worker in constant 1970 dollars. Manufactured exports: proportion of manufactured export products in non-oil exports in 1995. Telecom: number of telephone lines per 1 000 inhabitants in 1996.

Trade and Specialisation

The countries of the region are not all integrated to the same degree with the European Union. The Maghreb countries, for obvious geographical and historical reasons, are generally more oriented towards Europe than are the Mashrek countries (Table 2.3). This can be observed in both trade and official development assistance (ODA).

Table 2.3. **Relations with the European Union**

	Imports from EU (%)	Exports to EU (%)	Trade with EU (%)	ODA from EU ($m)	ODA from EU (%)	FDI from EU (%)
Algeria	67	62	63	304	97	37
Egypt	41	53	43	835	41	50
Jordan	40	8	30	146	27	na
Lebanon	44	18	40	68	36	100
Morocco	54	61	57	442	89	72
Syria	30	58	52	54	16	100
Tunisia	72	80	76	102	143	73
Turkey	53	50	52	20	6	70

Sources: Chauffour and Stemitsiotis (1998), Petri (1997*a*), OECD (1997*a*). The trade figures are for 1996. The figures on official development assistance and foreign direct investment are for 1995. The percentages are of the totals being considered: for example, the first column gives the proportion of imports from the EU in total imports.

More than half of the three Maghreb countries' total trade — exports and imports — is with the European Union, while Syria is the only Mashrek country which sends more than half of its exports to the EU, and Egypt is the only Mashrek country which obtains more than half of its imports from the EU. In terms of

industrialised country aid flows as well, there is a higher concentration of EU aid in the Maghreb than in the Mashrek: the three Maghreb countries receive more than 90 per cent of their bilateral and multilateral aid from European Union countries, whereas aid for the Mashrek countries comes from a greater variety of sources. The United States is the leading donor to Egypt among the members of the OECD Development Assistance Committee. Jordan and Syria receive the greater part of their ODA from Japan. Aid to Lebanon comes mainly from the United Nations Relief and Works Agency for Palestine Refugees.

The contrast between the Maghreb and the Mashrek is less striking in the area of foreign direct investment (FDI). Investments are small, and mainly come from the European Union[2]. The region as a whole does not seem to have taken advantage of the recent globalisation of investment to attract new foreign partners in new sectors. It still largely depends on its traditional European and Arab partners, who invest in sectors that procure few gains in terms of growth or technology transfer, such as finance, real estate and refineries (Petri, 1997*a*).

The countries of the region are thus at different levels of commercial and financial integration with the EU. Some of these differences are due to history, geography and political relations with Europe. Others can be ascribed to each country's level of development and to past economic policies, since the structure, intensity and growth of each country's trade with the EU still largely reflects the development, integration and industrialisation strategy followed in past decades (Table 2.4). This can be illustrated by changes in the degree of trade openness expressed in terms of purchasing power parity[3]. This uncommon method of representing trade policy sheds new light on the nature and evolution of the share of international trade in each country's economic activity: the openness of all the countries except Turkey decreased between 1980 and 1995, in particular because the price of tradeable goods, which faced increasing competition on the world market, fell with respect to that of non-tradeable goods. This decrease was particularly large in Algeria, Egypt, Jordan and Syria where openness was reduced by approximately half. This is probably symptomatic of the Dutch disease, as the decrease was smaller in Morocco and Tunisia, which have smaller rents. Turkey alone seems to have allocated a greater share of its resources to international trade.

This difference in strategy is also identifiable when the degree of openness is expressed as a level. It might be thought that openness is determined by the economic size of each country as well as by trade policy: the larger an economy is, the less it should depend on the outside world. Yet Tunisia, whose economic weight (measured by GDP) is similar to Syria's, is one and a half times more open; and Turkey, whose GDP is twice that of Egypt, is one and a half times more open. The same sort of reasoning can be applied to geographical considerations by using Lee's (1993) estimates of natural propensities to trade. The estimated propensity depends negatively on the country's area and on the distance between its capital city and the capitals of the world's 20 leading exporters. According to Lee, for example, Algeria has a higher natural propensity to trade than Turkey. In fact, however, Algeria is much less open to international trade. This seems to indicate a clear difference in strategy concerning integration in the international division of labour.

Table 2.4. **Sectoral Breakdown of Exports to EU in 1995**

	Agriculture (%)	Manufacturing (%)	Other (%)	Textiles (%)	Growth of exports to EU (%)	Openness 1980-95
Algeria	0	3	97	0	1	46 - 15
Egypt	6	33	61	15	4	19 - 10
Jordan	4	77	19	5	22	60 - 35
Lebanon	14	82	4	24	12	
Morocco	23	66	11	41	8	22 - 14
Syria	2	11	87	8	3	46 - 20
Tunisia	12	75	13	54	7	41 - 32
Turkey	18	76	6	48	14	10 - 17

Sources: Bayar (1998), World Bank (1998*b*), ERF (1998). Export growth is measured between 1980 and 1996; the rate shown is the average annual growth in the value of exports (in US dollars). Openness is the ratio of the sum of total exports and total imports to GDP measured in international dollars at purchasing power parity.

Algeria, Syria and, to a lesser extent, Egypt based their development strategies on exporting oil and natural gas and on import-substitution manufacturing, while Tunisia, Turkey and Morocco, largely lacking such resources, opted for a strategy of encouraging and diversifying manufactured exports, mainly textiles. The differences in the sectoral composition of exports partly explains the countries' different growth rates. Algeria, Egypt and Syria are the three countries with the lowest proportion of manufactured exports in total exports. They are also the countries having the lowest growth of exports to the European Union.

The composition of these countries' imports from the EU is much more homogeneous, and is typical of trade between an industrialised region and a developing region (Coghlan *et al.*, 1997). A majority of the imports are capital goods. It can be seen from Table 2.5 that the capital goods category is the largest in each country, accounting for 30 to 45 per cent of imports from Europe. Table 2.5 also gives between parentheses the composition of imports from all the trading partners of the Mediterranean partner countries, and thus shows the European Union's specialisations in the Mediterranean partners' markets. Obviously, the larger the share of imports from the EU in total imports, the more similar the two compositions will be. This is true for Algeria and Tunisia, for example. In contrast, the structure of Egypt's imports of goods from the rest of the world is very different from that of its imports from the European Union, particularly because of its special relationship with the United States and US financial aid for imports of US agri-food products.

This geographical dimension of trade is significant for examining the potential effects of regional integration, especially trade diversion and trade creation effects. In one respect, it may be assumed that the less a partner country currently trades with the EU, the greater is the potential for trade diversion (Tovias, 1997). But it can also be assumed that the more the EU's specialisations in the markets of partner countries differ from those of the rest of the world, the less trade diversion there will be, owing to the low substitutability between products from different sources. Trade diversion will be even less significant since there will be trade creation between Europe and partner countries, which is a source of income growth and thus of demand for imports in general.

Table 2.5. **Sectoral Breakdown of Imports from the EU in 1995**

	Agriculture (%)		Chemicals (%)		Misc. (%)		Textiles (%)		Equipment (%)		Capital goods (%)		Growth of imports from EU (%)
Algeria	25	(33)	19	(15)	6	(5)	3	(3)	15	(15)	32	(29)	-1
Egypt	16	(28)	21	(17)	10	(9)	3	(4)	10	(11)	39	(31)	9
Jordan		(23)		(25)		(5)		(6)		(10)		(34)	3
Lebanon		(26)										(27)	5
Morocco	13	(20)	24	(30)	8	(7)	10	(8)	13	(11)	31	(25)	7
Syria		(15)		(18)		(20)		(4)		(7)		(36)	1
Tunisia	8	(12)	18	(23)	7	(6)	31	(24)	8	(8)	29	(27)	6
Turkey	5	(7)	26	(31)	6	(6)	5	(8)	15	(13)	44	(35)	15

Sources: UNCTAD (1998), ERF (1998), Central Bank of Syria (1997), World Bank (1998*b*). The breakdown of total imports (from all sources) is given between parentheses. Growth of imports from the EU is measured between 1980 and 1996; the rate shown is the average annual growth in the value of imports (in US dollars). Agriculture: HS 1-24; Chemicals: HS 24-40; Miscellaneous: HS 41-48, 92-99; Textiles: HS 49-67; Equipment: HS 68-83; Capital goods: HS 84-91 (HS = harmonised system).

The growth of imports from the EU depends on many factors. The first is the financial capacity to import, which depends in particular on export earnings. The countries which imported the least from Europe (Algeria and Syria) are also those which exported the least to Europe between 1980 and 1996. A second major factor of growth in the value of imports is the type of trade regime in place. The level of nominal protection can be measured by, among other indicators, the ratio of tariff revenue to the value of imports. As these ratios differ sharply from one country to another, it can be expected that eliminating tariffs on imports from Europe will affect each country differently.

It is difficult, however, to find a clear causal relationship between changes in protection levels and changes in imports. For example, between 1980 and 1996 the level of nominal protection in Algeria doubled (+9 percentage points; Abed, 1998), while that of Syria decreased by two percentage points, but the two countries' trade with Europe and the rest of the world followed similar trajectories. Morocco and Tunisia also saw similar trends in their trade relations with the European Union despite different movements in their trade regimes.

Several reasons can be invoked to explain this lack of correlation between aggregate tariff protection and total imports. One obvious reason is the presence of non-tariff barriers. Moreover, the same aggregate rate of tariff receipts can mask large differences in levels of protection per product. In certain countries, the average protection level is pulled upwards by a few highly taxed products, such as alcoholic beverages, while in others the structure of protection is much more uniform. Two countries with the same average levels of protection may actually have quite different tariff structures, because of preferences granted to certain regions, or because different goods are imported from different regions in accordance with their specialisations. The importance of export buoyancy in explaining import growth has also been noted. Tariff protection may undermine export performance if it is applied to imported products which could promote export dynamism, for example by encouraging technology transfers, by reducing the cost of inputs or by increasing competitiveness.

Thus the impact of trade integration through tariff reduction mainly depends on the initial structure of protection, by products and origin, and on the nature of each country's system of production.

Adjustment and Response Capacity

A third significant element to take into account for understanding the potential effects of integration is the economies' ability to absorb the temporary but major shock caused by reducing nominal protection with respect to each country's leading trade partner. This shock actually involves various effects. First, the equilibrium of the balance of payments is likely to be destabilised by the increasing demand for imported products. Second, fiscal equilibrium is likely to be affected by the loss of the tariff revenue formerly collected by the government on imported products from the EU. Lastly, sectoral factor reallocation induced by the increased competitive pressures on domestic markets, as well as by the emergence of new opportunities for exporting industries, may entail major costs — especially in terms of unemployment — if the capital and labour markets do not display sufficient allocative efficiency.

In recent years, most partner countries have shown substantial progress in macroeconomic stabilisation and structural adjustment. This progress, together with the region's weak links with South-east Asia, to a large extent immunised the Mediterranean countries from the negative consequences of the Asian crisis (ERF, 1998). Not all of them have progressed to the same extent, however, and it is clear that the most macroeconomically vulnerable countries may not be strong enough at present to undertake rapid trade integration with the European Union. Given these macroeconomic situations, the intensity of trade with the European Union and the type of trade regime in each country, it is likely that the Mediterranean partner countries will have to face different costs, and thus different priorities. The Maghreb countries will inevitably be most directly affected by integration: since these three countries have the region's highest levels of protection as well as the highest proportion of trade with the EU, they are likely to experience both the largest fiscal shocks and the largest external shocks.

The success of regional integration in each country will largely depend on the allocative efficiency of the capital and labour markets. The financial sector must reallocate available funds to the sectors having the best comparative advantages after liberalisation. An effective way of encouraging such movements is to increase the amount of available funds by mobilising more domestic savings, as it is less costly to allocate new investment funds to new sectors than to reconvert existing physical capital. However, most of the Mediterranean partner countries already suffer, to differing degrees, from a gap between national saving and the observed investment rate. If Mediterranean partner countries do not increase national saving, they may well fail to benefit from the opportunity provided by the Euro-Mediterranean agreements for acquiring the most suitable technologies at lower cost, or be forced to let the success of their investment projects depend on foreign investors' perceptions of the country.

The most recent trends seem to show that where most of the Mediterranean partner countries are concerned, such investors do not yet see a yield-risk ratio which might be an incentive to make large investments (FEMISE, 1999). On the basis of observed investment rates and the share of investment financed by national savings, it can be concluded that the countries are in fairly different situations in this respect. With the exception of Lebanon and Jordan, the countries with the highest investment have the highest national saving rates (World Bank, 1998*b*).

Lastly, the economies' ability to reallocate their workers efficiently to the most buoyant sectors will probably determine *in fine* the political feasibility of the overall integration reform. Too great a rise in the unemployment rate or a worsening of the income gap between groups could compromise the reform. In this respect, some groups are especially threatened: unskilled workers, public sector workers and, initially, industrial workers. It is very difficult to obtain labour market data that are comparable across countries, but one of the few such indicators available is the official unemployment rate (Table 2.6). This rate shows that there are particularly large distortions in Algeria's labour market. Jordan, Morocco and Tunisia also have high unemployment rates, although they may be overestimated (Rama, 1997). Turkey, Lebanon, Syria and, to a lesser extent, Egypt appear to have institutions providing greater labour market flexibility.

Table 2.6. **Labour Markets in 1995**

	Unemployment Rate %	Women's Participation %	Growth of working pop. % 1995-2010	Illiteracy rate (%)	Public Employment (%)	Manufacturing Employment (%)
Algeria	28	24	2.9	38	57	12
Egypt	11	29	2.6	49	35	14
Jordan	14	21	3.4	13	47	7
Lebanon	7	28	2.2	15		
Morocco	16	35	2.4	56	20	19
Syria	8	26	3.6	29		15
Tunisia	16	30	2.3	33	25	20
Turkey	7	35	1.8	18	13	40

Sources: World Bank (1998*b*), Radwan *et al*. (1994), Said (1996), United Nations (1996).

This general assessment should not obscure a major source of segmentation in the labour markets of Mediterranean partner countries, namely the strong discrimination against women. The low rate of women's participation in the labour force is undoubtedly a consequence of this. As can be seen in Table 2.6, this rate is particularly low in Jordan, Algeria and Syria, and high in Turkey and Morocco compared to the average. The same type of argument used for capital can be applied to labour: the transition costs due to reallocation would be probably be lower if the economies managed to mobilise a larger proportion of the working-age population, which could be employed immediately to develop the new comparative advantages without impairing the position of workers already employed. The lesson of past experience in this respect is that the successful examples of export-led industrialisation and development have always depended on a large increase in the female participation rate (ERF, 1998; Milner and Wright, 1998).

Similar reasoning can be applied to the huge influx of young people onto the labour market. This is a major challenge for the Mediterranean economies because it will require massive job creation, but it also represents an opportunity since these new market entrants will probably be better able to occupy jobs in expanding sectors. These occupations will undoubtedly require greater skills, which the youngest generations seem to have relative to the workers already in place, and the jobs will tend to be located in the cities, where population growth is highest. Bloom and Canning (1999) hold that the demographic transition, more generally, can even be regarded as a very favourable period for growth, if it is accompanied by policies promoting economic liberalisation and the mobilisation of savings for investment. The increase in savings (due to the fall in the dependency ratio) and human capital (due to the influx of young people) can be a powerful engine of growth if the new resources are allocated to the most productive sectors after liberalisation.

A demographic transition is under way in all the countries, but at quite different rates (Fargues, 1993). Jordan and Syria, the countries where the transition is least advanced, will have to absorb labour force increases of approximately 50 per cent between the present and 2010. At the other extreme, the rise will be less than 25 per cent in Turkey.

The average educational level of the working population is also an important factor of successful integration, for two reasons: a higher educational level facilitates reallocation of labour, because skilled workers are generally more mobile than unskilled workers and better informed about labour market trends; and skilled workers are better placed to take advantage of the new technological opportunities which come with liberalisation, but which generally make little use of unskilled labour (Robbins, 1996). The differences here are quite marked from one country to another. In Morocco, 56 per cent of the population aged over 15 years was still illiterate in 1995, compared to only 13 per cent in Jordan.

The same reasoning applies to income distribution: if liberalisation did not naturally encourage income redistribution in favour of the poorest, then the least egalitarian countries, such as Jordan, Morocco and Tunisia, would undoubtedly have to be more concerned about strong opposition to the reform than would Egypt[4]. Opposition could also come from workers in public enterprises, who are relatively numerous in Algeria, Jordan and Egypt. Finally, the employment share of the manufacturing sector differs sharply from country to country. Since manufacturing is the sector where reallocation will have largest impact in the short run, it may be assumed that, *ceteris paribus*, more reallocation will occur in the countries having a high proportion of manufacturing employment.

Tunisia and Egypt: Two Distinct Cases from the Same Regional Integration Process

The foregoing discussion has emphasised two major points. The first is the large number of structural factors which must be taken into account when trying to analyse the impact of integration and to identify the supporting policies which will encourage

its success. To study the complex process of regional integration, one must thoroughly examine economic structures, the behaviour of economic agents and the policy instruments available to the authorities of each country. The scope and nature of any changes in exogenous factors (oil resources, international climate, demography, etc.) are also important, as such changes will alter the conditions under which integration will occur; they will be particularly important during the transitional phase, which should see the most radical of the upheavals brought about by integration.

The second point which should be underlined is the diversity of situations confronting the economies of Mediterranean partner countries. These differences are present in all features studied: levels of development, trade and specialisation structures, and capacity to complete the transition successfully.

When these two aspects — complexity and diversity — are considered in combination, they point to the conclusion that the integration process must be analysed at the level of the country, and not of the region as a whole. We believe this "country" approach to be much richer, since it obviates the need to make simplifying assumptions to compare and combine the various countries in a single quantitative analysis. This consideration is especially significant when using an applied general equilibrium model, since one of the major advantages of such models is their faithful representation of economic structures.

Our analysis of integration has been intentionally restricted to two countries, Egypt and Tunisia, and thus our conclusions cannot be completely generalised to the whole South Mediterranean region. Nevertheless, this choice seems to cover many characteristics which are representative of the region.

Tunisia is among the region's most modern and developed countries, while Egypt belongs to the less developed. Tunisia belongs to the Maghreb, Egypt to the Mashrek. Tunisia trades primarily with the EU, Egypt much less so. Their trade regimes and degree of openness both differ. Egypt still possesses large oil rents, while Tunisia had to adopt another mode of development.

The patterns of specialisation clearly differ. Since 1970, Tunisia appears to have made a much greater effort to diversify than Egypt (Bensidoun and Chevallier, 1996). In 1994, Tunisia's revealed comparative advantage lay in the production of fertiliser, vegetable oils, clothing and inorganic chemicals, while Egypt's was in the production of cotton textiles and oil (Petri, 1997*b*). These specialisation strategies do not seem to have the same potential for medium-term development: Tunisia's export products have much more growth potential than Egypt's.

These countries do not exhibit extreme characteristics in any of the areas previously mentioned, and thus are not unique cases from which any generalisation would be impossible. Moreover, the differences between them are not too great, so that comparison of their experiences can provide some lessons. They are close geographically, separated only by Libya, and have many points in common. They have comparable macroeconomic conditions, for example, and, despite a higher investment rate in Tunisia, also seem to have similar levels of allocative efficiency.

Their private sectors account for roughly similar shares of the economy. Lastly, the proportion of foreign direct investment in total investment is also comparable in the two countries[5].

Is It Reasonable to Adopt the "Small Country" Assumption?

We have argued that an analytical approach to Mediterranean integration should be based on individual modelling of partner countries rather than of the whole area. The fact is that although the partnership agreement is the same for all, its consequences will probably differ from one economy to another, depending on their characteristics. The same applies to the supporting policies which the agreement is supposed to encourage, since the problems to be resolved, and the instruments available for resolving them, differ appreciably from one country to another.

Under these circumstances, country-level modelling is more instructive than a global or regional approach, because it is much more precise. Multi-country models often lose in precision what they gain in coherence at the international level. These models are particularly well suited for studying the interdependence of policies at a regional or world level, but constructing them generally requires the use of simplifying assumptions concerning the characteristics of each economy, in order to compensate for the lack of comparable information on different countries. Country models, in contrast, permit the use of richer and more precise statistical data on the characteristics of the economies studied, and are more suitable for studying the impact of various reforms on the local level.

To make sure these analyses are viable, however, we must raise a methodological issue which has major implications for economic policy: determining whether there is a contradiction between individual actions and their consequences on the regional level[6]. In our case, the question is whether applying the same agreement to all the countries will lead each of them to adopt the same industrial specialisation. If that were the case, what would be the impact on the terms of trade? Would there be a risk of a substantial drop in export prices in these countries, since all the Mediterranean partner countries would be increasing their supply of export products in the same sectors? Likewise, would there be a risk of significant pre-tariff price increases for European products because of increased demand from all the partner countries?

In other words, is it permissible to assume world prices to be exogenous (the "small country" assumption) in order to analyse the impact of the bilateral agreements between the European Union and each Mediterranean partner country? Are the results significantly biased if the analysis does not consider the endogenous reaction of the terms of trade to the tariff reduction planned in the partnership agreements?

To look for answers to these questions, we used a multi-country model which describes the economies of the region in rather crude fashion, but which has the advantage of being able to estimate how the terms of trade will be affected by lower tariffs on European industrial imports to all the countries of the region. This model

was developed by the OECD Development Centre (OECD, 1997*b*) to study policy interdependence at the world level to the year 2020. It uses a consistent global database, the most recent and most disaggregated of its kind: version 4.0 of the Global Trade, Assistance and Protection (GTAP) database (Hertel, 1997). All regions of the world are modelled.

With the exception of the small country assumption, which was not used in this model, its specifications are very close to those we adopted in our country models, whose main characteristics are detailed in the Appendix. It differs, however, in the way the terms of trade are determined. These are endogenous and fixed by balancing the supply of and demand for the products traded by countries, distinguished by their origin and destination. The model determines, for example, an endogenous price at which Turkey sells its olive oil on the European market. This is different from the price at which Morocco sells its olive oil on the same market (or the price at which Turkey sells its olive oil on the Japanese market), because European consumers make a distinction between the origins of various oils. This distinction determines the extent of each economy's market power. If the European consumer regarded all these products as homogeneous, then each country would lose its market power, and the good considered would have a single price on the European market. The same type of behaviour is observed on the markets of Mediterranean partner countries.

We thus use this model to see whether the implementation of the partnership agreements by 12 Mediterranean partner countries appreciably modifies their terms of trade with the rest of the world, and particularly with the European Union.

Unfortunately, this model does not represent each Mediterranean partner country. The countries are grouped in five geographical entities: Morocco (MAR) and Turkey (TUR), which are modelled individually; the rest of North Africa (RNF), which includes Algeria, Tunisia, Egypt and Libya; the Near and Middle East (RME), which includes Israel, Jordan, Lebanon, Syria and all the Persian Gulf countries (the last are not involved in the partnership agreements, like Libya in the RNF group of countries); and the rest of the world (ROW), which includes Cyprus, Malta, the territories controlled by the Palestinian Authority and many other countries.

This geographical grouping is not particularly well suited to the problem at hand. We therefore decided to estimate the impact of the Euro-Mediterranean agreements on the terms of trade of the Mediterranean area by successively simulating tariff reductions for each part of the area, to observe whether a tariff reduction in part of the Mediterranean area affects the terms of trade in another part.

We simulated 15 scenarios — which is the number of combinations that can be formed with four elements[7] (MAR, TUR, RNF, RME) — in which the customs duties on industrial products imported[8] from Europe are completely eliminated in the area considered. Other tariff protections remain unchanged. We used a static version of the model in which the factors of production (physical capital and labour) are perfectly mobile. We are thus interested only in pure long-term reallocation. Questions concerning the transition or accumulation effects are not addressed here. The whole model includes six areas: four Mediterranean areas, the European Union and the rest of the world.

Table 2.7 presents the relative variation of the terms of trade (the variation of the ratio of export prices to import prices) for the six regions in the 15 scenarios. For example, the first line describes the impact of liberalisation of Moroccan tariffs on European products; the eighth describes that of liberalisation of TUR and RNF tariffs on European products; and the last that of simultaneous liberalisation with respect to the EU by the four Mediterranean regions. The variations of the terms of trade for the countries participating in the partnership are in bold type.

Table 2.7. **Variations in the Terms of Trade**
(percentages)

	MAR	TUR	RNF	RME	EU	ROW
MAR	**-3.5**	0.0	0.0	0.0	0.0	0.0
TUR	0.0	**-0.6**	0.0	0.0	0.0	0.0
RNF	-0.1	-0.1	**-2.6**	-0.1	0.1	0.0
RME	0.0	0.0	0.0	**0.0**	0.0	0.0
MAR, TUR	**-3.5**	**-0.7**	0.0	0.0	0.0	0.0
MAR, RNF	**-3.6**	-0.1	**-2.6**	-0.1	0.1	0.0
MAR, RME	**-3.5**	0.0	0.0	**0.0**	0.0	0.0
TUR, RNF	-0.1	**-0.7**	**-2.6**	-0.1	0.1	0.0
TUR, RME	0.0	**-0.7**	0.0	**0.0**	0.0	0.0
RNF, RME	-0.1	-0.1	**-2.5**	**0.0**	0.1	0.0
MAR, TUR, RNF	**-3.6**	**-0.7**	**-2.6**	-0.1	0.1	0.0
MAR, TUR, RME	**-3.5**	**-0.7**	-0.1	**0.0**	0.0	0.0
MAR, RNF, RME	**-3.6**	-0.1	**-2.6**	**-0.1**	0.1	0.0
TUR, RNF, RME	-0.1	**-0.7**	**-2.6**	**-0.1**	0.1	0.0
MAR, TUR, RNF, RME	**-3.6**	**-0.7**	**-2.6**	**-0.1**	0.1	0.0

Sources: Authors' calculations using the GTAP 4.0 database.

Notes: The terms of trade are measured by the ratio of export prices to import prices. Import and export prices are weighted indices of prices of products by volume. The prices are those observed on the world market, i.e. before domestic taxes.

Two preliminary remarks are necessary. First, the tariff reduction provided for in the partnership agreements does not affect the terms of trade of the rest of the world, and affects only marginally those of the European Union, which sees a small, increasing supply of products exported by the Mediterranean partner countries arriving on its domestic market and an increase in demand for its export products by Mediterranean partner countries. Second, the terms of trade of Mediterranean partner countries are unchanged, at best, and often fall. This result is hardly surprising: by reducing their protection with respect to European products, the countries increase domestic demand for these products. In order to preserve a fixed value of the visible trade balance (imposed by the model), they must increase their export earnings, notably through a real depreciation which makes their products more competitive on foreign markets. The extent of the depreciation depends on the adjustment needed, whose magnitude in turn is largely dependent on the structure and level of the initial tariffs.

These results chiefly show that the terms of trade of each of the four sub-regions are hardly affected at all by the other sub-regions' decisions concerning participation in a standard partnership agreement with the European Union. In other words, the individual decisions of each do not affect the type or magnitude of the consequences of decisions taken by the others. It makes no difference to the terms of

trade of the "rest of North Africa" (RNF) whether the RNF region alone liberalises with respect to Europe, or does so in parallel with one, two or all three other Mediterranean regions. Its import prices rise 2.5 to 2.6 per cent in relation to its export prices, depending on the combination used.

Table 2.8 shows the export and import price changes for all the products covered by the model when the four sub-regions institute the same tariff reduction for products from the European Union[9]. The results provide an idea of the type of specialisations which the Mediterranean partner countries could undertake and what types of products would be in domestic demand after trade liberalisation with the EU. These changes in the terms of trade are also calculated by, in turn, lowering and raising our assumptions concerning the substitutability of products from different regions. In this case, the elasticities of substitution and transformation for all the regions are first divided by two (low assumption) and then multiplied by two (high assumption)[10] to determine whether the assumptions used in this field have an influence on the results. This change in assumptions does not affect our findings concerning the variation in the terms of trade after liberalisation: there is a decline of 0.6 per cent under the low and central assumptions and of 0.7 per cent under the high assumption. The difference in the findings by products is not much greater: for 19 of the 21 products considered, the variations do not exceed 0.2 percentage points using the different assumptions.

Table 2.8. **Export and Import Price Variations by Product**
(percentages)

	Export prices			Import prices		
	Low	Central	High	Low	Central	High
Crops	-1.5	-1.3	-1.4	0.8	0.5	0.0
Livestock	-0.8	-0.6	-0.6	0.1	0.1	0.1
Mining	-0.6	-0.5	-0.5	-0.4	-0.3	-0.3
Agri-food	-0.8	-0.7	-0.7	-0.2	-0.2	-0.2
Textiles	-1.2	-1.0	-1.1	-0.1	-0.1	-0.2
Clothing	-0.6	-0.5	-0.5	-0.3	-0.3	-0.3
Leather	-0.5	-0.4	-0.4	-0.4	-0.4	-0.3
Wood industry	-0.9	-0.7	-0.7	0.8	0.7	0.5
Paper products	-0.7	-0.6	-0.6	-0.4	-0.4	-0.4
Refining	-1.0	-0.9	-0.9	0.0	0.0	-0.1
Chemicals	-1.1	-1.1	-1.1	0.6	0.6	0.6
Minerals	-0.5	-0.5	-0.6	-0.1	-0.1	-0.1
Ferrous metals	-0.9	-0.8	-0.8	0.0	0.0	-0.1
Metal products	-1.1	-1.0	-1.0	0.7	0.7	0.6
Other metals	-0.9	-0.7	-0.7	0.1	0.0	0.0
Motors	-0.9	-0.9	-0.9	0.0	0.1	0.1
Transportation equipment	-0.5	-0.4	-0.3	0.4	0.5	0.5
Electrical equipment	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3
Other electrical products	-1.2	-0.9	-1.0	0.3	0.1	-0.1
Other manufactured products	-0.3	-0.5	-0.5	-2.1	-2.4	-3.0
Services	-1.1	-1.0	-1.1	0.9	0.9	0.7

Source: Authors' calculations using the GTAP 4.0 database.

The price changes are also relatively homogeneous between products. In other words, unconditional liberalisation by all the MENA countries with respect to the European Union does not — at the level of disaggregation which we used, at least — seem to exert significant upward or downward pressure on the prices of traded goods. This result also seems robust with respect to alternative assumptions on the degree of market power of each of the three areas.

The results obtained here ensure the viability of the subsequent analyses, which assume that the external environment of the countries considered is not modified endogenously by the process of regional integration between the European Union and the 12 Mediterranean partner countries. It is probable, of course, that the external environment of the Mediterranean partner countries will change, for reasons that can be foreseen and identified today: the enlargement of European Union to the east, the adoption of a single currency by the EU countries, and the discontinuation of the Multi-Fibre Agreement, scheduled for 2005. However, the consequences of these events are not readily quantifiable. This uncertainty could prove awkward if this study were a forecasting exercise, but it is not: our analysis of Tunisia and Egypt should rather be regarded as an attempt to identify the specific impact of the partnership agreements on the structure and the development of the economies considered. Given the preliminary results that we have just described, this analysis is unlikely to be biased by omission of the endogenous reaction of the region's terms of trade to the tariff reduction provided for in the partnership agreements.

Traditional Static Analysis of a Simple Tariff Reduction

Here we try to measure the impact, in terms of well-being, trade creation and trade diversion, of a gradual decrease in Egyptian and Tunisian tariffs on imported European industrial products. This analysis is conducted with two independent country models.

As we pointed out in Chapter 1, the agreements in force provide for gradual tariff dismantling, differentiated by the type of products imported from Europe. In practice, products are grouped into five lists in the Tunisian agreement. We assume that the same will be done for Egypt. The first list enumerates the goods for which tariffs will abolished immediately, namely capital goods not manufactured locally. The second list covers goods for which tariffs will be dismantled within five years from the coming into force of the agreement: primarily raw materials and other inputs not produced locally. The third list comprises goods for which tariffs will be abolished over the 12-year transitional period, one-twelfth per annum. These are domestically manufactured products considered to be competitive by the Tunisian authorities. The fourth list covers other industrial products for which tariff dismantling will be carried out over 12 years, beginning with a four-year grace period, then by one-eighth per annum. The fifth list concerns the products not covered by the agreement: some industrial products, all agricultural products and services.

Given the level of sectoral disaggregation in our two models (23 industrial products for Tunisia, 20 for Egypt) and the level of disaggregation used for product classification in the partnership agreement (seven decimals, or approximately 5 000 products covered), we consider it essential to estimate the progressive tariff dismantling, rather than arbitrarily assigning each of our 23 and 20 products to only one of the five lists in the agreement. In fact, each aggregate product in our two models includes products whose tariffs will drop quickly and others whose tariffs will drop more slowly. Thus the nominal protection of each product decreases according to the proportion of each category in its composition. The dismantling schedule is given in Table 2.9, which shows large differences in initial protection in Tunisia and Egypt from one product to another. It also can be seen from the table that at the end of the period some products, such as carpets and agri-food products, will retain significant nominal protection. The treatment of these products and of services will not be discussed until five years after the agreement comes into force. Thus at present, the Euro-Mediterranean agreements actually involve only the industrial sector.

We simulated the impact of this reduction for Tunisia and Egypt. In order to compare the results for the two countries and have estimates of net variations in well-being and trade creation/diversion, we used aggregate versions of the two models. The models include only one representative household and two trading partners, the European Union and the rest of the world. In contrast, sectors and products are disaggregated as much as possible. In these models, the loss of tariff revenue is offset by a lump-sum transfer from the representative household to the government, so as to leave the (predetermined) budget balance unchanged in volume. This is the most neutral closure rule possible, since it will not replace one source of distortions by another or increase public deficits.

The effect of tariff reduction in Egypt and Tunisia was simulated through the use of static models. Time not being a factor in a static model, the economy is not affected by structural changes such as demographic growth or depletion of natural resources. Nor is it affected by modifications in the international economic environment, such as changes in the terms of trade or transfers of foreign savings. Capital and labour resources are given and are completely mobile from one sector to another.

This model is admittedly imperfect, because it cannot take into account many dynamic phenomena which will occur during the integration process, and which we will consider at length in the following chapters. Nevertheless, it has the advantage of measuring the total gains from factor reallocation resulting from a tariff reduction, and only this. Moreover, this tool was used in most of the previous empirical work[11] aimed at quantitative evaluation of the consequences of the Euro-Mediterranean Partnership. Thus the exercise we carry out here can be compared with that work.

Table 2.9. **Planned Dismantling of Tariffs on Imports of EU Industrial Products**
(percentages)

	1995	1998	2001	2004	2007	2010
TUNISIA						
Flour	35	35	35	35	35	35
Edible oils	29	28	27	25	25	25
Tinned goods	39	39	39	39	39	39
Sugar	18	18	17	17	17	17
Other agri-food	214	211	202	193	192	191
Beverages	49	49	49	46	44	41
Mining	31	27	20	10	5	0
Steel	18	13	7	1	1	0
Metals	33	28	23	14	7	0
Agricultural machinery	14	7	5	3	1	0
Transportation equipment	34	31	23	14	6	0
Electrical equipment	17	9	6	3	1	0
Electronic equipment	25	13	9	4	2	0
Household appliances	48	42	35	22	11	0
Chemicals	24	20	12	3	2	0
Yarn	5	5	4	3	1	0
Carpets	69	62	48	30	21	12
Clothing	2	2	2	1	0	0
Leather	5	5	4	2	1	0
Wood industry	33	31	26	16	8	0
Paper products	28	25	22	14	7	0
Plastics	29	24	15	7	3	0
Other manufactured products	8	7	5	3	1	0
EGYPT						
Crude oil	10	7	4	2	1	0
Mining	8	7	5	3	2	1
Food products	11	10	10	10	10	10
Beverages	147	147	147	139	131	124
Tobacco	0	0	0	0	0	0
Cotton	6	5	2	0	0	0
Processed cotton	32	22	13	5	3	0
Other textiles	74	56	41	19	9	0
Leather	43	39	29	19	9	0
Shoes	82	66	66	43	22	0
Wood industry	10	10	10	7	4	1
Furniture	60	43	41	27	13	0
Paper products	20	17	16	10	5	0
Chemicals	13	8	4	1	1	0
Refining	11	5	3	2	1	0
Rubber	23	12	9	5	3	0
Building materials	27	12	9	5	2	0
Machine tools	22	8	6	3	1	0
Transportation equipment	60	47	38	25	12	0
Other manufactured products	18	8	5	2	1	0

Source: Authors' calculations from UNCTAD (1998) data.

The results are presented in Table 2.10. Three economic policy measures were tested. The first (*S1*) consists in setting tariffs for European industrial products at the levels planned for 2010, as shown in Table 2.9. The second (*S2*) extends this measure to the rest of the world. The third (*S3*) extends tariff dismantling to all products, but for the European partner alone. A comparison of these simulations then gives an idea of the loss or gain in well-being resulting from a preferential approach, and/or involving only a subset of products.

The results are expressed as relative deviations with respect to the situation observed without reforms. The first measurement which interests us is the change in well-being, defined as the amount which the consumer must pay after the reform to obtain the same amount of utility as before the reform. In our presentation, the sign of the variation is reversed so that a positive sign indicates a gain in well-being. It can be seen from Table 2.10 that each of the three reforms gives the consumer a gain in well-being in both countries. The results obtained are comparable with those of Konan and Maskus (1997) for Egypt and with those of Rutherford, Ruström and Tarr (1995) for Tunisia: a long-term gain of the order of 1 to 2 per cent in well-being for the simulation of preferential liberalisation for European industrial products (*S1*). The results of this simulation include both trade creation (an appreciable increase in the volume of imports and exports in the two countries) and trade diversion in favour of the European Union. Trade diversion is more marked in Egypt, since the initial share of products imported from the rest of the world was much higher there than in Tunisia. Exporters from the rest of the world lose market share in both Egypt (from 61 per cent to 48 per cent) and Tunisia (from 26 per cent to 15 per cent). This trade diversion has a higher cost for well-being in Egypt than in Tunisia, as one can observe by comparing simulations *S1* and *S2*. Thus this result seems to confirm the concern expressed by Tovias (1997) that the Mashrek countries would be more prone to the risk of trade diversion than the Maghreb countries, because the former's sources of imports are more geographically diversified.

Table 2.10. **Static Effects of Tariff Dismantling**
(percentages)

	Egypt			Tunisia		
Tariff reduction	*S1*	*S2*	*S3*	*S1*	*S2*	*S3*
Change in well-being	2.0	3.0	2.2	1.4	1.4	4.0
Imports	16.2	34.5	17.0	17.2	21.2	23.0
Exports	19.7	41.8	20.6	25.1	30.9	33.4
Imports from EU	56.5	33.4	61.0	33.5	22.8	43.9
Imports from ROW	-9.4	35.2	-11.0	-29.8	16.6	-37.5
Exports to EU	20.4	44.4	21.4	17.0	13.8	24.5
Exports to ROW	19.5	39.7	19.9	55.6	94.5	66.7
Tariff revenue	-49.2	-89.8	-53.5	-70.6	-80.8	-86.4

Notes: The relative change in well-being (calculated by the simple Hicks equivalent, uncompensated by the change in disposable income) is expressed as a percentage of the nominal disposable income of the representative household. *S1*: tariff dismantling for European industrial products; *S2*: tariff dismantling for industrial products from all sources; *S3*: tariff dismantling for all European products.

A comparison of simulations *S1* and *S3*, on the other hand, seems to indicate that Tunisia would have more to lose than Egypt from delaying the liberalisation of services and agriculture. The additional gain in well-being from an extension of the agreement to agriculture and services is marginal for Egypt (a change from 2 to 2.2 percentage points) but very significant for Tunisia (a change from 1.6 to 4 percentage points). This is mainly due to the fact that Tunisian agriculture is highly protected, and encouraged to compete with European agricultural production.

Analysis of the impact of the various reforms on trade flows also leads to some interesting conclusions. First, the potential for trade creation with the European Union is significant in the two countries, and of the same order of magnitude. This result tends to confirm the result obtained by Chevallier and Freudenberg (1999), using much more disaggregated trade data. These authors emphasise the complementary nature of the structure of trade between the European Union and several Mediterranean partner countries (including Egypt and Tunisia). This could prove significant for the well-being of households, which could gain access to a more diversified supply of products; it could also turn out to be significant for growth, if one agrees with Fernández and Portes (1998) or Chevallier and Freudenberg (1999) that an increase in trade intensity between large industrialised areas and small developing countries is an important engine of growth.

Second, the amount of trade creation lost through a geographical limitation of liberalisation is much higher in Egypt than in Tunisia, while that lost through restricting liberalisation to industrial products is higher in Tunisia than in Egypt. The latter result reflects the anti-export bias maintained by Tunisian support for agriculture, which encourages producers to compete with imports of European agricultural products instead of developing export agriculture.

Third, Egypt's export potential to the European Union compared with the rest of the world appears to depend not on the type of trade liberalisation (geographic extension of tariff dismantling or extending the coverage of products concerned), but rather on its intensity. The relative increase in exports to the EU and the ROW was actually of the same order of magnitude in each of the three simulations *S1* (20 and 20), *S2* (44 and 40) and *S3* (21 and 20). In other words, it seems that the Egyptian economy's specialisation is not greatly affected by the trade policies tested here (either a geographical preference or limiting liberalisation to a category of products). Another interpretation of this result is that Egypt has approximately the same comparative advantage with respect to the European Union as it has with respect to the rest of the world. This seems less true in Tunisia, where the extension of tariff dismantling to all partners seems to cause a massive redeployment of exports previously intended for the European Union to the rest of the world.

Finally, it is instructive to use the static model to observe the impact of tariff dismantling policies on government revenues. It should be recalled that besides the proportion of imports on which tariffs are reduced in total tariff receipts, the final loss of tariff revenue depends on the facility with which agents (producers and consumers) substitute between products they consume by type and origin. The loss

also depends on disposable household income after the reform, but in the analytical framework used here the substitution effect prevails over the income effect, because labour and capital resources remain fixed.

The estimated loss of tariff revenue in Egypt after dismantling tariffs on European industrial products is approximately 49 per cent. If it were assumed that agents were unable to substitute between products by type or origin in consumption, this loss should be strictly equal to the proportion of tariff revenue derived from imports of European industrial products in total tariff revenue. In the reference simulation, however, receipts from European industrial products represented only 34 per cent of this total. In other words, the substitution effect increases the automatic loss by 15 percentage points. In contrast, in the second simulation, *S2*, the automatic loss (89 per cent) is comparable to the simulated loss, which seems to indicate that the large substitution effect observed in the first simulation was a substitution effect between imports of different origin (EU or ROW), and not between domestic and imported products, or between types of products (industrial products, agricultural products and services).

The estimated loss to Tunisia (71 per cent) after dismantling of tariffs on European industrial products is naturally higher than in Egypt, since these products generate a larger share of revenue in the reference simulation. On the other hand, the substitution effect is weaker (11 percentage points). In the second simulation (*S2*), the automatic loss is 4 percentage points lower than the simulated loss, since tariff revenue on industrial imports from the EU and the ROW amounts to 77 per cent of total tariff receipts in the reference simulation. This seems to suggest that Tunisian consumers and producers can substitute more easily than can their Egyptian counterparts between imported and domestic products, or between industrial products, agricultural products and services. This effect is actually due to the fact that the proportion of household consumption that is considered to be subsistence consumption — which by its nature cannot be reduced, and which consists mostly of primary products — is higher in Egypt because of the greater poverty there. In the third simulation, this observation was confirmed when the loss estimated by the model was compared with the automatic loss: the two losses are comparable, which seems to indicate that the substitution effect observed previously was partly attributable to increased consumption of industrial products, to the detriment of food products and services.

Once again, the same dichotomy between Egypt and Tunisia appears: it seems that Egypt should be more concerned with its geographical strategy, while Tunisia seems more sensitive to the product coverage of its liberalisation policy. The influence of existing structures cannot be ignored, however: the bulk of Tunisia's tariff revenue comes from tariffs on industrial products imported from the European Union. Moreover, total tariff revenue in 1995 accounted for a much larger proportion of fiscal revenue in Tunisia than in Egypt (15 per cent against 9 per cent). Fiscal compensation is thus an important issue for Tunisia. The success of the transitional period, and hence that of Tunisia's trade integration with the European Union, will largely depend on how the government approaches this matter.

Conclusion

This chapter has emphasised several points concerning the consequences of regional integration for the Mediterranean partner countries. First, these consequences largely depend on the individual characteristics of each Mediterranean partner country and on the supporting policies adopted in these countries during the transitional period. Second, the impact of the trade policy decisions taken by each Mediterranean partner is not affected by the decisions of the other Mediterranean countries with respect to trade integration with the European Union. If all participate in trade integration, there is little risk of a large adverse change in the terms of trade.

A static analysis of the impact of the partnership agreements on Egypt and Tunisia showed that there is substantial potential for trade creation with the European Union. It also revealed the risk of trade diversion, which is especially significant for Egypt. Tunisia seems to face less risk in this domain because it already has close links with the European Union. On the other hand, it seems that Tunisia needs to be more concerned with which products are covered by trade liberalisation and, in particular, to consider reform of its agricultural policy, which seems to limit significantly the growth potential of its exports. It must also quickly determine how to implement an effective fiscal compensation policy, which will have to be undertaken during transition to prevent the risk of an increase in its public deficit.

These results underline the different impacts that an identical agreement can have from one country to another, and thus confirm the value of the analytical approach adopted for this work, which focuses on the national dimension of regional integration. However, the static analysis presented in this chapter, which is widely used to study the impact of trade policies, has its limits. As we have already pointed out, the gradual nature of tariff dismantling is important, particularly because the schedule for tariff reduction differs from one product to another. The agreement actually provides for rapid dismantling of tariffs on imports of products having no domestic equivalent, and slow dismantling of protection for products which compete with imports. This can appreciably modify the sectoral distribution of effective protection during the transitional period and have a strong effect on the allocation of resources, particularly investment, to the sectors which will remain protected during this period. For this reason, a model that simulates the implementation of tariff dismantling at different periods for different products seems more appropriate for analysing the integration process. Concomitantly, several Mediterranean partner countries, and in particular Tunisia, are committed to reforming their trade policies over the next five years under the GATT or the Multi-Fibre Agreement. These modifications will thus take effect during the transitional period, and they should be taken into consideration in order to represent the environment governing agents' decisions in a more realistic manner.

Other factors should also bring about great changes in the economic environment and structure of the Mediterranean partner countries during the transitional period. These factors include population pressure and the depletion of natural resources, which will necessitate factor reallocation to activities that are more labour-intensive and less

intensive in use of natural resources. In addition, the issue of whether the incentives provided by the Euro-Mediterranean agreements are compatible with this essential restructuring effort has not been addressed at all. These questions cannot be studied in a static analytical framework, which by definition is unable to represent the transitional period.

More generally, the success of integration largely depends on achieving dynamic gains. It is even probable, as pointed out by Boughzala (1997), that Tunisia would not have signed the partnership agreement if it had expected the only gains to be those predicted by static models. Such agreements can also be expected to lead to faster factor accumulation and acceleration of technology transfers, which should have an impact on the economic growth rate.

Notes

1. This distinction is also important if it is assumed that regional integration can promote economic convergence: this phenomenon is more likely to occur between two countries having similar levels of industrialisation and development than between countries having similar levels of wealth. This is suggested by studies on the existence of convergence clubs, which emphasise the role of the human capital stock and the development of the financial system in the formation of such clubs. There is now an ample literature on this subject: for example, see Cohen (1996) or Berthélemy and Varoudakis (1996).

2. In 1995, direct investment from the European Union represented 66 per cent of total FDI to the seven countries for which data by origin were available (Table 2.3). The total amount for the eight countries was 2.1 billion euros. The total amount of development assistance granted to these eight countries was twice as much, i.e. 4.3 billion euros.

3. The degree of openness (the ratio of imports plus exports to GDP) is measured using data expressed in purchasing power parity (World Bank, 1998*b*), in order to take into account the change in tradeable goods prices relative to that in non-tradeable goods prices, which is generally underestimated when the market exchange rate is used to measure this statistical indicator.

4. The most recent estimates of the Gini coefficient for income distribution are: 0.39 for Algeria; 0.32 for Egypt; 0.43 for Jordan; 0.40 for Morocco; 0.48 for Turkey (World Bank, 1998*b*; OECD, 1997*c*).

5. In 1996, the share of private investment in total investment was 59 per cent in Egypt and 51 per cent in Tunisia. The proportion of FDI was 0.9 per cent in Egypt and 1.6 per cent in Tunisia in the same year (World Bank, 1998*b*).

6. For example, this question has been addressed in order to study the coherence at the international level of multilateral organisations' recommendations to countries exporting tropical products (Evans, Goldin, and van der Mensbrugghe, 1992).

7. The rest of the world (ROW) is excluded from the analysis. It is reasonable to say that the omission of Malta, Cyprus and the territories controlled by the Palestinian Authority has no significant effect on our analysis of the terms of trade, because these economies have a very small share in world trade. Moreover, the level of product aggregation which we employ in the model remains rather high (21 products), even though we used the maximum disaggregation available for manufactured goods: the probability of omitting from the analysis a product for which one or more of these three economies holds substantial market power is thus very small.

8. The list of these products is given in Table 2.8. Tariffs are abolished on all products, except for cultivated products, livestock, oil and natural gas, agri-food products, and services, which are not covered by the partnership agreements.

9. To calculate such indices, we group the four sub-regions modelled hitherto into a single geographical entity, MENA. Thus the model now considers only three regions: MENA, EU and ROW. The findings can be interpreted as the upper limits of the variation in world prices resulting from the integration of the Mediterranean partner countries. Since MENA includes many countries which are unlikely to undertake liberalisation with the EU any time soon, the increase in demand for imported European products and the resulting rise in the supply of export products are very likely overestimated compared to what would actually occur if the 12 Mediterranean partner countries entered into partnership agreements. The agreements' impact on prices is therefore overestimated as well. Moreover, we assumed perfect product substitutability within the region, which ignores the individual countries' market power.

10. In the central simulation, the elasticity of substitution between domestic and imported products is 2.2; it is 5 between imported products, depending on the source. The elasticity of transformation between domestic and exported products is 5, and that between exported products is 8, depending on the destination.

11. Kebadjian (1995); Rutherford, Ruström and Tarr (1993, 1995); Konan and Maskus (1997).

Chapter 3

Transition Issues: the Case of Tunisia

Tunisia is one of the richest and most dynamic of the Mediterranean partner countries. It is also the one most oriented towards the European Union. Since independence, the Tunisian economy has been strictly regulated and highly protected. Following the crisis of the 1980s, Tunisia succeeded in implementing macroeconomic stabilisation measures (Morrisson and Talbi, 1996), and for the last ten years it has been steering the economy towards market mechanisms through structural reform. The Tunisian approach has been pragmatic and gradual, in order to reduce the social cost of liberalisation. What role can the association agreement with the European Union play in the process of domestic and external liberalisation? The case of Tunisia is particularly interesting because it is the first Mediterranean country whose agreement has actually come into force. Moreover, Tunisia began the tariff dismantling provided for in the Euro-Mediterranean agreement from 1996. For this reason, the country's experience will be extremely useful for studying the problems and issues of the transitional period before the completion of the free-trade area. After reviewing the key reforms undertaken so far, the first part of the chapter addresses two main questions: *i)* changes in effective protection by sector; and *ii)* estimation of losses in tariff revenue. Effective protection, which measures the level of protection on final goods after taking into account the cost of inputs, is a good indicator of the incentives given to Tunisian entrepreneurs. Our results suggest that the structure of tariff dismantling provides good incentives for industry but slightly strengthens protection for services. The dominant effect, however, is an increase in effective protection for agriculture, primarily due to the intrinsic orientation of Tunisian policy towards this sector. This is unfortunate, since our simulation in Chapter 2 of the static effects of the Euro-Mediterranean agreements showed that Tunisia would have everything to gain from extending the agreement to all of its products. Moreover, broadening the scope of the Euro-Mediterranean agreement would place the partnership process in conformity with the rules of the World Trade Organisation, of which Tunisia is a member, and in particular with Article XXIV of the GATT. This article stipulates that regional free-trade agreements are compatible with the non-discrimination rules if they fulfil two conditions (Solignac Lecomte, 1998): they must *i)* "be implemented within a reasonable period", and *ii)* "cover substantially all trade". Although the first condition appears to be met

(the WTO considers that 12 years is a reasonable period), the second may furnish grounds for objections by other WTO member countries, because of the article's lack of clarity (Nagarajan, 1998). In any case, including agricultural products in the liberalisation process would certainly reduce the possibility that the association agreement will be called into question — a fact that increases the value of studying the consequences of broader integration between the EU and Tunisia. The second part of the chapter therefore explores the prospects of extending the Euro-Mediterranean agreement to agriculture (Tunisia has agreed to begin agricultural negotiations with the EU in January 2000) and the accompanying reforms that Tunisia could undertake in the field of agricultural policy.

Domestic and External Reforms

The narrowness of the Tunisian market makes domestic economic liberalisation inseparable from opening up to foreign competition (Lahouel, 1998*a*), as the country's authorities have recognised. Box 3.1 recapitulates the dates of the main structural reforms carried out since 1986. The reforms began with the 1986 agreement with the IMF and devaluation of the dinar. Domestic reforms and trade liberalisation are closely intertwined.

Box 3.1. **Tunisia's Major Liberalisation Reforms**

Date	External liberalisation	Domestic liberalisation
1976	Co-operation agreement with the EU.	
1986	Stand-by arrangement (IMF). Depreciation of the dinar.	
1987	Revision of agreement with the EU. QRs on capital goods lifted. Tariff reform.	Financial liberalisation begins.
1988	Lifting of QRs on consumer goods begins.	Introduction of VAT. Money market reform.
1990	Tunisia joins the GATT.	Income tax reform.
1991	Imposition of temporary complementary duties.	Law on free prices and competition. Law on distribution.
1993		Investment code. Creation of an inter-bank foreign exchange market. Law on redundancies.
1996	Association agreement between the EU and Tunisia begins to be implemented. Unilateral dismantling of tariffs on some capital goods (from all countries).	Abolition of rediscount.
1998	Agreement with EU and free-trade area with the Arab League officially come into force. Revised agreement with Morocco.	

Domestic Liberalisation

A segmented productive sector

Tunisia's productive sector is quite small. Only 11 per cent of the 87 000 enterprises employ more than ten people, and only 4 000 are considered as belonging to industry properly speaking, instead of craft industry. Thus a majority of enterprises are small and family-owned. They lack qualified marketing and accounting managers, and they have too much short-term bank debt and too little capital (Lahouel, 1998*b*).

The role of the state

Alongside these private enterprises, the public sector plays an important role, mainly in mining, energy, water management and services (transport, telecommunications and vocational training). The industrial sector is managed by a government agency, while agricultural land is state property. Public enterprises account for 35 per cent of total value added and 44 per cent of investment.

Until recently, the state's influence also extended to controlling prices. These were either set administratively or else controlled in advance, on the basis of the cost calculations and desired margins of firms. This system has been gradually eliminated since 1991. Liberalisation at the production level is well advanced. In 1993, 87 per cent of all prices were unregulated. Prices remain fixed for chemical products, transport, water, electricity, medical services, some food products and school notebooks. At the distribution level, the prices of agri-food products, vehicles, chemicals and construction are still subject to a substantial degree of control.

Industrial policy has increased the segmentation of the productive system. Until 1987, firms' investment projects were subject to authorisation, and a battery of tax incentives, investment assistance schemes and earmarking of bank deposits favoured activities such as agriculture, tourism and housing, as well as promoting exports. Investment assistance could amount to as much as 1 per cent of GDP.

Export Enterprises

Special treatment was granted for export enterprises in the 1993 investment code. Enterprises exporting the major part of their production are considered as being offshore businesses[1], and as such are exempt from duties on their imported inputs and from VAT. They also enjoy a preferential company tax rate for ten years, as well as streamlined customs procedures. These enterprises can also sell the remainder of their production domestically by opening sales outlets. In practice, however, such sales are authorised only if the product does not have a local equivalent. Otherwise, the firm can sell at most an amount equivalent to its purchases of domestic inputs.

Enterprises under the general tax regime which export part of their production are given similar tax treatment for their exports[2]. To obtain the tax exemption on imports, however, they must show that the capital goods bought abroad have no domestic equivalent.

This system has two purposes: promoting exports and protecting Tunisian industry. In practice, this involves cumbersome control mechanisms. For example, an enterprise under the general regime which exports part of its production. or an offshore enterprise which decides to open domestic sales outlets, must distinguish physically between input stocks intended for domestic and those intended for export production. Moreover, export enterprises are not encouraged to strengthen links with domestic suppliers. Tariff dismantling should lead to a gradual convergence of these two regimes.

Services

Services remain protected on the whole. The 1991 trade law eliminated administrative authorisation for commercial activity (except for alcoholic beverages, tobacco and real estate agencies). Productive and commercial activities are strictly separated: in general, firms cannot sell directly to the consumer; if they are authorised to do so, they can sell only what they produce, instead of being able to supplement their product range with products bought from others. Distribution in Tunisia is dominated by small traditional traders, and often by series of such traders (a small shopkeeper obtains supplies from another small shopkeeper). This system was made possible by price controls. In the future, price liberalisation should lead to a clearer division between wholesalers and retailers.

Foreign Direct Investment

FDI in the offshore enterprises is unrestricted but foreign managerial staff is limited. Foreigners can also invest in agriculture, although they cannot land. Authorisations for foreign investments were eliminated for services directly related to industry (consulting and engineering) but remain in force in activities such as tourism, transport, telecommunications and financial services. Two free zones are in the process of being launched, in Bizerte and Zarzis. In practice, FDI represents less than 2 per cent of GDP and is predominantly concentrated in energy.

Agriculture

Agriculture and agri-food products are traditionally regulated by a policy having three aims: achieving food self-sufficiency for some products, guaranteeing agricultural income and maintaining low prices for necessities. This led to considerable state influence in some areas: *i)* development of agricultural infrastructure and encouragement of private investment; *ii)* mobilisation and protection of natural resources; *iii)* training of farmers and dissemination of new techniques; *iv)* controls on the prices of fertilisers, pesticides and other inputs, as well as consumer prices; and *v)* protection of the domestic market from foreign competitors.

Private investment incentives mainly took the form of subsidised interest rates, tax breaks for purchases of agricultural equipment and machinery, and subsidies for irrigation equipment. The state has responsibility for investments in agricultural infrastructure, mobilising water resources and protecting arable lands from erosion and desertification.

The state is also responsible for the improvement of agricultural techniques and the identification of varieties of plants and animals suited to Tunisia's climatic conditions, in view of the small size of farms. Agricultural extension units were established in all the agricultural regions, but have been widely criticised, in particular because too many government agencies are involved. Pricing policy and the evolution of agricultural trade policy will be discussed below.

Trade Liberalisation

Tunisia had a high level of protection, based on licences and tariffs. Since 1990, Tunisia has been a member of the GATT/WTO. Tariff protection was decreased during a first stage (1986-88) by a reduction and standardisation of rates. Duties for industrial goods, which ranged from 5 per cent to 236 per cent in the early 1980s, were between 17 per cent and 43 per cent in 1988, and the long-term goal is to reach an average tariff rate of 25 per cent, as against 33 per cent in 1995. Agricultural and agri-food products remain highly protected, with an average rate of 43 per cent. It should be noted that there are agricultural tariff quotas between the EU and Tunisia: a preferential rate applies up to a certain quantity, after which a much higher rate applies. As a result of this system, the average rate of nominal protection of some agricultural products can theoretically vary with the quantity imported.

Quantitative restrictions (QRs) have now been eliminated for 92 per cent of imports. Quotas remain for some agricultural goods (including goods subject to an import monopoly, such as sugar, cereals, coffee and tea), some manufactured goods (textiles, leather, chemical products) and energy. In practice, the effective elimination of QRs is dependent on the publication of specifications which must be met by imported goods, and these specifications are not always published immediately. Moreover, some products are taxed on minimum reference values fixed by the customs service, and not on actual prices. In 1991, temporary countervailing duties from 10 per cent to 30 per cent (the latter rate on consumer goods) were introduced to compensate in part for the abolition of QRs. In 1995, temporary duties were also imposed on clothing, in addition to the existing quotas on these goods. These temporary countervailing duties are being decreased by 10 per cent a year and should soon be eliminated[3].

The association agreement with the European Union

The European Union is Tunisia's leading trade partner, accounting for 76 per cent of Tunisia's two-way trade. This dependence is primarily due to industry — 80 per cent of imported industrial products come from Europe and 78 per cent of Tunisia's industrial exports are for the European market — but much the same holds for agricultural products and their derivatives, since 70 per cent of Tunisia's exports of such products go to the EU. European imports constitute somewhat less than half of total imports of agricultural and agri-food products (approximately 40 per cent). The association agreement with the European Union is thus of vital importance, as it is likely to modify appreciably the structure and intensity of Tunisia's trade with its

primary partner. As was already mentioned, the trade provisions of Euro-Mediterranean agreements are characterised by tariff dismantling at differing rates from one product to another. Table 2.9 shows the progression of tariff dismantling for the product groups in our model. It is not uniform, and some products will still enjoy significant protection in 2010.

Tunisia began its tariff dismantling with respect to the European Union in 1996, not waiting for ratification by the European countries or the agreement's official coming into force in March 1998. Dismantling of List 4 (goods competing with domestic production) will begin into 2001, coinciding with the end of the Tunisia's ninth plan. Talks with the EU on liberalisation of services should begin in 2003, while agricultural questions will be tackled from 1 January 2000 to decide on liberalisation measures applicable in 2001. However, the current Euro-Mediterranean agreement does modify the former agricultural agreement. It includes measures providing for: *i)* extending to the European level the preferences granted by France to Mediterranean partner countries for some products (new potatoes, tomato paste, oranges other than fresh); *ii)* free access at certain periods of the year for new goods, such as market garden produce; *iii)* increased quotas at zero tariffs for oranges, new potatoes, tomato paste and fresh apricots (Mahjoub, 1996). In return, Tunisia is offering the European Union preferential access for cereals, meats and dairy products and is committed to consolidating its concessions under the GATT.

The financial provisions of the association agreement consist of the MEDA contribution and financing by the European Investment Bank. The EIB is participating in the industrial zones project, the quality programme and the training programme. The total amount devoted to Tunisia under the MEDA programme is about 500 million Tunisian dinars for the 1997-99 period, of which 150 million dinars — largely relating to the macroeconomic component — had been released at the time of writing. The projects to be financed are governed by planning in favour of priority sectors; financing extends over three years and is reviewed annually. The sectoral component had not been released as of November 1998[4]. The delays seem longer than for the projects financed under previous agreements because of increased monitoring[5].

Other Trade Liberalisation Reforms

In order to limit trade diversion and benefit from the buoyancy of other markets, Tunisia unilaterally dismantled the tariffs for all its partners in 1996 on some capital goods having no domestic equivalent, which correspond to the products on List 1. Capital goods with domestic equivalents will be liberalised over 5 or 12 years. The authorities also plan to dismantle in a non-discriminatory manner the tariffs on foreign inputs, and to decrease gradually the rate on inputs having domestic competitors, from 43 per cent to 25 per cent in 2001, then to less than 10 per cent. Moreover, has Tunisia revised its agreement with Morocco to allow eventual cumulation of rules of origin with the EU. The agreement with Morocco provides for three lists: the first with a common tariff of 43 per cent, the second with tariffs ranging from 5 per cent to 17 per cent and the last with zero tariff. Tunisia is also a member of the Arab

League's free-trade area, which came into force in January 1998. The latter provides for gradual tariff dismantling over 10 years, except for agriculture, services and a fairly long negative list of industrial products. Tunisia also signed an agreement with Jordan, which has not come yet into force.

Transition Issues

Experience since 1996 shows that Tunisia will be confronted with three principal issues as trade liberalisation continues: the long-term viability of domestic industry and the application of the government's modernisation programme; the adaptation of institutions to liberalisation and market mechanisms, beginning with the civil service; and ways of compensating for the loss of tariff revenue on imports from the EU.

Developments since 1996

Since 1996, there has been a deterioration in the balance of trade, which already was structurally in deficit. Trade with Europe increased, especially exports of textiles, olive oil and energy products, as well as imports of foodstuffs, capital goods and refined oil products. The overall deficit with respect to the EU deepened in 1997, with increased dependence on the three leading partners (France, Italy, Germany), although the Tunisians had hoped to diversify their partners within the European Union via the Euro-Mediterranean agreement. Apart from Europe, Libya is becoming a more significant trading partner, accounting for 5 per cent of Tunisian exports in 1997; this is far ahead of exports to Morocco, which represent less than 1 per cent of the total (Banque Centrale de Tunisie, 1998).

The deterioration of the balance of trade is not due to the association agreement alone. For example, there were increased imports of capital goods and inputs, especially by the textile industry (such goods amounted to half of all imports in this sector) and engineering and electrical industries. As the major part of the imported inputs are intended for "offshore" businesses, which were exempted from duties even before the association agreement, the rise in imports is not a direct result of reduced tariffs but rather due to a revival of demand. Other factors also played a role, like climatic fluctuations (record olive oil harvest), the rising dollar, the fall in oil production, and even weaker Asian demand, which affects a few products such as phosphates. The balance of trade in final goods, which until then had been in surplus, is narrowing, which can be seen as an early-warning sign of the response capacity of demand to import liberalisation: for example, clothing imports increased by 20 per cent in value in 1997.

By sectors, there has been a general slowing of inflation, apart from the rise in the export price of phosphates. Thus it seems that tariff dismantling did not lead to collusion between importers in industry[6], but again, without an analytic model it is

very difficult to determine how much of this is due to tariff dismantling. Despite price liberalisation, consumer price inflation has remained stable (Ministère du Développement économique, 1998).

The level of investment increased, primarily because of public sector investment. Private enterprises did not follow suit: their gross fixed capital formation (GFCF) increased by 10 per cent in 1997 (in value) compared to an overall investment rise of 17 per cent. As for the sectoral allocation of investment, the GFCF growth rate in textiles fell by a point between 1996 and 1997, despite investments carried out under the modernisation programme (see below). Private investment actually advanced the most in the trade and housing sectors in 1997. Without being able to establish a causality link, some observers believe that this marks the beginning of reconversion following the Euro-Mediterranean agreement: producers threatened by liberalisation move into distribution or property. These service sectors are not only outside the scope of the association agreement, but they also benefit from additional protection because the imported portion of their inputs is now less expensive.

The response of private productive investment is crucial to growth forecasts for Tunisia. The ninth plan, which covers the 1997-2001 period, is based on growth of 6 per cent per year, with continuing macroeconomic stabilisation and deficit reduction (Ministère du Développement économique, 1998). These forecasts assume a three-point rise in the investment rate to 27.5 per cent of GDP. One of the keys for Tunisia's development is successfully attracting investors and reorienting saving towards productive activities, notably through a combination of domestic reforms and the Euro-Mediterranean agreement.

Modernising the Private Sector

Tariff dismantling schedule and changes in effective protection by sector

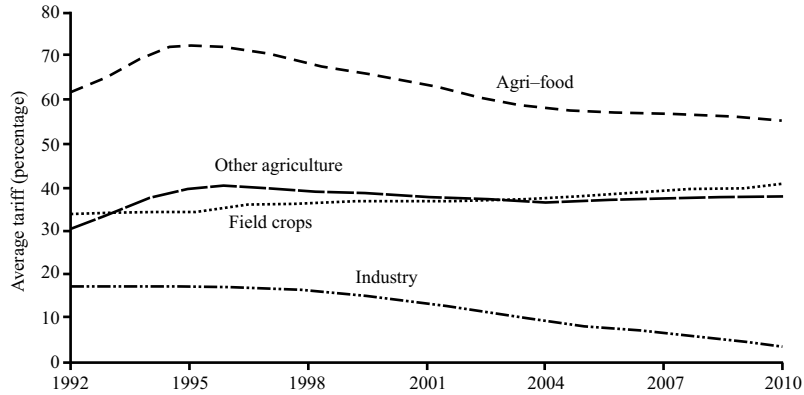
The Tunisians are worried that the calendar of tariff dismantling will involve waiting or rent-seeking in the temporarily protected sectors. Tariff dismantling on finished products will begin only in 2001; until then, these products enjoy an unchanged rate of protection as well as tariff reduction on their inputs. This perverse effect of transition could explain the absence of a response by private investment as well as the lack of enthusiasm for the modernisation programme; if so, it would justify advancing the beginning of tariff reduction for these products. Changes in protection are difficult to calculate for two reasons. First, part of the nominal protection of agricultural goods is endogenous because of tariff quotas: the level of protection depends on the quantities imported. Second, it is difficult to estimate *ex ante* the rate of effective protection, i.e. the duty on the end product after deducting the cost of inputs, because this calculation requires that substitutability between imports and domestic products and between goods from different sources be taken into account. A good approximation can be given by general equilibrium modelling.

The dynamic model used here is described in detail in the Appendix. It covers 57 sectors and is calibrated from a social accounting matrix built for this purpose for the year 1992. It is simulated through 2010.

The results of the reference scenario in terms of nominal protection are given in Figure 3.1, and the detailed figures on effective protection in Table 3.1. This scenario takes into account Tunisia's various commitments under the Euro-Mediterranean agreement, the GATT and the dismantling of the Multi-Fibre Agreement. Consequently, it provides a detailed picture of effective protection by representing the progressive changes in protection for each sector after the implementation of these agreements. Only a dynamic model can simulate the net effect of combining these agreements, which will come into force at different periods.

Figure 3.1 shows that the nominal protection of the industrial sector, already low compared to agriculture, decreases appreciably until 2010. In contrast, protection of agriculture remains very high and decreases only slightly. The nominal protection of some agricultural sectors (soft wheat, livestock, sugar and "other fruits") even increases between 1992 and 2010, because of tariff quotas: the growing demand for imported agricultural products leads to imports in excess of the quotas and thus to an endogenous rise of average protection. After the 1995 consolidation, average agricultural tariffs are stabilised by two opposing forces: reduction of rates under the GATT until 2004 and endogenous tariff increases.

Figure 3.1. **Change in Nominal Protection, 1992–2010**



Note: The average tariff includes tariff barriers, which were abolished in 1995 as a counterpart for tariff consolidation under the GATT.
Source: Author calculations.

Table 3.1. **Change in Effective Protection after the Euro-Med Agreement**
(percentages)

	Effective Rate of Protection					Variation due to Euro-Med Agreement			
	1995	1998	2001	2004	2010	1998	2001	2004	2010
Soft wheat	26	32	37	41	53	0.2	0.3	0.2	-1.6
Hard wheat	13	13	13	14	14	0.0	0.0	0.0	-0.9
Barley	11	11	11	11	15	0.0	0.0	0.0	-1.2
Other cereal grains	10	10	10	9	9	0.0	-0.1	-0.2	0.0
Legumes	8	7	7	6	6	0.0	0.0	0.0	0.0
Fodder	28	26	24	22	22	0.0	0.0	0.0	0.0
Beets	-4	-4	-4	-4	-4	0.0	0.0	0.0	0.0
Other industrial crops	50	46	43	39	39	0.0	0.1	0.2	0.2
Olives	-14	-15	-16	-19	-25	-0.2	-0.6	-1.8	-2.5
Citrus fruit	0	0	0	0	0	0.0	0.0	0.0	0.0
Dates	0	0	0	0	0	0.0	0.0	0.0	0.0
Grapes	-1	-1	-1	-1	-1	0.0	0.0	0.0	0.0
Other fruits	113	105	97	88	88	0.0	0.0	0.0	0.0
Vegetables	16	14	13	11	11	0.0	0.0	-0.1	0.0
Other agriculture	16	15	14	13	13	0.0	0.0	0.1	0.0
Livestock	12	16	19	22	27	0.1	0.1	0.0	0.6
Forestry	64	60	55	51	52	0.0	0.1	0.3	0.6
Fishing	0	0	0	0	0	0.0	0.0	0.0	0.1
Meat	75	74	72	68	68	0.1	0.2	0.3	0.3
Milk	41	40	40	39	40	0.0	0.0	0.0	-0.2
Flour	23	21	19	17	17	0.0	0.0	0.0	0.0
Edible oils	30	27	25	22	22	0.0	0.1	0.1	0.3
Tinned goods	35	33	30	27	28	0.0	0.0	0.0	0.0
Sugar	45	45	45	44	46	0.1	0.2	0.3	0.0
Other agri-food	145	135	125	114	115	0.0	0.0	0.1	0.0
Beverages	37	34	31	29	29	0.0	0.0	0.0	0.0
Mining	18	17	14	9	3	-1.0	-4.0	-8.8	-15.5
Steel	-15	-16	-24	-32	-16	-1.7	-9.0	-15.8	4.2
Metals	21	18	14	5	-12	-2.9	-6.5	-15.3	-31.8
Agricultural machinery	7	0	-1	-3	-6	-6.8	-8.3	-10.2	-12.0
Transportation equipment	29	27	21	14	0	-1.7	-7.9	-15.4	-29.0
Electrical equipment	7	4	2	1	1	-3.7	-5.1	-6.5	-6.6
Electronic equipment	17	10	7	3	2	-7.4	-10.5	-14.1	-16.2
Household appliances	36	32	28	19	2	-3.6	-7.8	-16.5	-33.9
Chemicals	101	100	94	83	68	-5.1	-4.3	-3.0	-7.8
Yarn	-2	-2	-3	-3	-5	-0.1	-0.3	-1.1	-1.9
Carpets	69	65	53	36	17	-4.0	-15.6	-33.1	-51.6
Clothing	1	1	1	1	0	0.0	-0.1	-0.6	-1.4
Leather	3	3	2	1	0	-0.2	-0.9	-1.6	-2.8
Wood products	17	16	15	12	4	-0.4	-1.5	-4.8	-12.8
Paper	6	5	4	-1	-10	-0.9	-2.2	-6.5	-15.6
Plastics	26	21	13	5	-3	-4.9	-13.3	-21.8	-29.2
Other manuf. products	6	5	4	3	1	-0.3	-1.3	-2.5	-4.4
Oil and gas	13	13	12	10	3	-0.2	-0.6	-3.2	-9.6
Water	-12	-12	-11	-11	-12	0.0	0.0	0.1	0.4
Construction	-1	-1	-1	-1	0	0.1	0.1	0.3	0.5
Commerce	32	29	26	22	18	-3.3	-6.1	-9.6	-14.7
Transportation	-6	-6	-6	-5	-3	0.4	0.7	1.7	4.8
Communication	-2	-2	-2	-1	-1	0.2	0.4	0.7	1.4
Hotels and restaurants	0	0	0	0	0	0.0	0.0	0.0	0.1
Finance	-14	-15	-15	-16	-20	0.4	1.0	2.0	4.6
Other services	-3	-3	-3	-2	-2	0.3	0.6	1.1	2.1
Real property	-4	-4	-5	-5	-6	0.0	0.1	0.2	0.7
Repairs	-7	-7	-7	-7	-8	0.3	0.5	1.0	2.2

Note: The average effective rate of protection is constructed by weighting the effective rate of protection of each sector at each period by the sector's volume of production. Measurement of effective rate of protection is given in percentages in Hoekman and Djankov (1997). "Variation due to the Euro-Med agreement": difference in effective rate of protection between a scenario including tariff dismantling under the Euro-Med agreement and a reference scenario without a Euro-Med agreement.

The relative increase in the nominal protection of the agricultural and agri-food sectors, which also benefit from the fall in industrial input prices, reinforces their effective protection: between 1992 and 2010, the average rate of effective protection of the agricultural and agri-food sectors rises from 36 per cent to 43 per cent, while the average rate for industry falls from 22 per cent to 18 per cent. Table 3.1 shows, however, that the Euro-Mediterranean agreement is not the main cause of this rise in effective agricultural protection. Granted, effective protection increases in sectors not covered by the agreement, as can be expected, but there is a difference between agriculture and services. In services, the predictable rise of effective protection (in transport, finance, real property, construction and repair work) is primarily due to the Euro-Mediterranean agreement, which lowers the duties on imported inputs in these sectors. In agriculture, the rise of effective protection observed for cereals, livestock and milk, forestry and sugar seems to be due to the maintenance of current agricultural policy, not the Euro-Mediterranean agreement. In industry, effective protection for steel could increase (but after 2004, and thus independently of the grace period for end products), while low substitution between imports and domestic goods (results not reported) means that effective protection for chemicals could also increase by 4 points between 1995 and 1998, then by 1 point until 2001, before falling. But these are completely isolated cases. In general, it seems that concern over a perverse effect from the calendar of tariff dismantling is largely unjustified.

Reconversion of the Productive and Financial Systems

A business modernisation programme was launched in 1996. It provides assistance in evaluating an enterprise's competitiveness, and then supplements the financing obtained for investment. Participation in the programme is voluntary. By the end of 1998, 331 companies had obtained subsidies of 111 million dinars, distributed over 3 years, for a total investment of 847 million dinars. A third of these enterprises were in the agri-food industry and a fifth were in textiles, clothing, leather and shoes. Another 431 companies have submitted applications. Thus only a relatively small number of Tunisia's 4 000 industrial firms have participated in the modernisation programme. There are several reasons for this.

First, the modernisation programme is by definition addressed to enterprises which have a chance of surviving competition. Second, some entrepreneurs are waiting, because they plan to enter other lines of business or feel they are not concerned by the programme because they are in temporarily protected sectors. In response to this wait-and-see attitude, government agencies plan to target priority sectors (clothing, electronics, leather and shoes), despite the policy of horizontal incentives of the 1993 investment code.

The other major element for reconversion of the productive system is to facilitate essential reorganisation and promote the creation of new enterprises. A strategic study of prospects to the year 2006 (Gherzi, 1998) estimates that the viable core of the textile and clothing sector consists of 540 enterprises[7] out of 2 400 counted in 1995, the rest being mainly micro-enterprises. The same study advocates creating

620 production units in the clothing industry (with an average of 90 employees per unit) and 700 in hosiery. However, lay-offs are subject to authorisation and the legal system is inadequate for dealing with bankruptcies (only a dozen cases are examined a year and the majority of bankruptcies are resolved by extra-legal means). Dismissed employees receive assistance for reconversion (training loans, granting of micro-loans by the Banque Tunisienne de Solidarité). If they have no unemployment benefits, their health benefits are maintained for a year. Measures will be also taken to encourage the recovery of businesses in difficulty.

Enterprise creation faces many obstacles. Industrial land, under public monopoly, is rare and expensive. In response to this problem, the government has created 16 industrial parks in coastal areas and subsidises the purchase of land for start-ups, but has not called the public monopoly into question. The numerous administrative steps involved in founding an enterprise require 22 months on average (Bechri, 1999). Infrastructure is inadequate. In the telecommunications sector, the waiting list for a line is excessive, rates are high and disconnections are frequent. Bank financing also remains expensive. Financial liberalisation began in 1987 but, in practice, the central bank still has a strong hold over private banks, which are considered to be very fragile (Bechri, 1998). Venture capital companies have been established to facilitate enterprise creation, with a mechanism for additional funding from the European Investment Bank.

Institutional Adaptation and Restructuring the Civil Service

Restructuring is not limited to companies. Institutions also must adapt to prepare for the liberalisation of trade. The civil service, in particular, has to change its operating procedures to deal with a market environment. For example, the pricing department of the ministry of domestic commerce used to determine the prices of each firm based on cost figures presented by these firms. Henceforth, it will be transformed into the Direction de concurrence (competition department), responsible for collecting information on prices, producing statistics on sectoral concentration levels and controlling prices *a posteriori*. Similarly, technical centres must drop their role as sectoral regulators to adopt a consultancy role, planning industrial strategies and disseminating information on foreign markets. It is not clear that the government is best qualified to advise enterprises, but it is trying to meet this new need in the absence for foreign consulting firms and bodies responsible for keeping a technology watch and monitoring markets.

A special effort is necessary in the area of vocational training. Until now such training has been provided by the government and has been rather general in nature, whereas export enterprises today (especially in textiles) have a need for specific technical skills in engineering and marketing.

The Fiscal Issue

Evaluating Fiscal Losses

The Euro-Mediterranean agreement involves a drop in state revenue, since imports of industrial goods from the European Union will eventually enter Tunisia without paying customs duties. This loss should be substantial because of Tunisia's dependence on this type of revenue and the weight of the European Union in the country's imports (71 per cent). As customs receipts represent 22 per cent of fiscal revenue, a simple estimate of the tariff loss due to the association agreement would be 16 per cent of total revenue. In practice, the loss is more difficult to estimate. First of all, owing to the schedule of tariff dismantling, this loss changes over time. For Abed (1998), the fiscal loss would rise from 36 million dinars in 1996 to a total of 415 million dinars at the end of the transitional period, and if countervailing duties on European products were also eliminated, the total loss would be 448 million dinars. Devarajan *et al.* (1997) point out that reducing customs duties also reduces the tax base for indirect domestic taxes, which increases the loss.

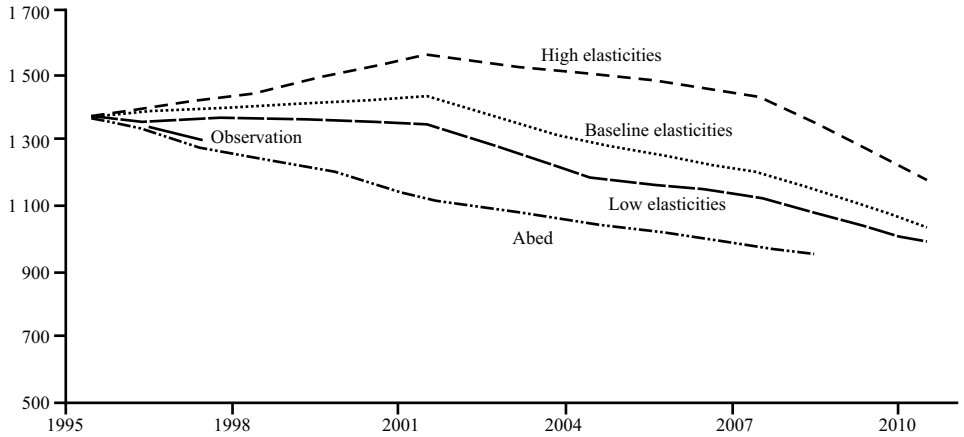
There are several indirect effects in addition to the direct effect. The first involves the trade diversion due to the preferential rates accorded to the EU, which depends on the degree of substitution between European products and those of the rest of the world. This first effect increases the fiscal loss, since products initially bought from other sources will now come from Europe and will no longer be subject to duty. Moreover, consumers will tend to substitute imported goods for domestic products, thus causing a loss of revenue from domestic taxes. Devarajan *et al*. (1997) estimate that the additional losses due to these indirect effects can be considerable, about 3 to 6 per cent of total receipts, depending on the extent of trade diversion to Europe.

The fiscal loss from customs duties that was actually observed in 1997 was 69 million dinars, which is lower than the amount calculated by Abed (1998) and *a fortiori* less than an estimation using the method of Devarajan *et al*. (1997). This was true even though Tunisia in 1996 extended to all its partners the tariff dismantling stipulated in the first phase of the Euro-Mediterranean agreement. Two factors could explain these differences. First, Devarajan *et al*. (1997) ignore the effect of growth, and Abed (1998) uses an accounting treatment (with a proportional relationship between imports and GDP) to deal with this effect. Second, the effects of deferring consumption and production can change not only demand for imports but also the supply of exports.

In order to estimate the impact of these factors, we simulated the tax losses by means of our computable general equilibrium (CGE) model and explored various compensation mechanisms. Figure 3.2 represents the changes in Tunisia's tariff receipts from 1995 to 2010. The baseline scenario assumes relatively high elasticities of 2.2 between domestic and imported products and of 5 between imports from different sources. The elasticity of transformation, which represents the degree of flexibility between exporting products and selling them on the domestic market, is 5; and the substitutability between the different destinations of exports is 8[8]. This scenario with "baseline elasticities" incorporates the tariff dismantling provided for in the Euro-

Mediterranean agreement but ignores the unilateral dismantling of 1996 (which explains the gap compared to the actual values for 1996-97). The simulation shows that tariff receipts do not decrease linearly after the Euro-Mediterranean agreement, as in Abed's (1998) estimate, but stagnate or even increase slightly before decreasing as from 2001. This result is due to the possibility of trade diversion/creation, ignored in Abed's (1998) calculation, as well as to a growth effect, which increases imports from the EU, in particular imports of agricultural goods.

Figure 3.2. **Change in Tariff Revenue** (millions of Tunisian dinars)



Note: *Baseline elasticities:* baseline scenario (see text). *Low elasticities:* baseline elasticities divided by 2. *High elasticities:* baseline elasticities multiplied by 2. *Abed:* Abed's (1998) series of tariff revenue losses, updated to the 1995 level of revenue.

It should be noted that no matter which assumptions are made about elasticities, there is a reversal of tariff revenue between 2001 and 2004. At the end of the simulation period in 2010, the tariff loss compared to 1995 is 24 per cent when the baseline elasticities are used. When we vary these elasticities, the loss relative to 1995 fluctuates between 14 per cent (high assumption for elasticities) and 28 per cent (low assumption)[9]. As the elasticities in the high assumption are not very credible, it is probable that the relative loss will be between 24 per cent and 28 per cent of total 1995 tariff receipts[10]. By way of comparison, Devarajan *et al.* (1997) estimate a relative loss of about 30 per cent using their static model. The simulation of tariff loss using a dynamic model leads to two original results. First, the final loss can be less significant than expected, once the effect of growth and the possibilities of deferred production and consumption are taken into account. Second, tariff losses will not be linear and are likely to lead to fiscal difficulties from 2001.

Compensation for Tariff Losses

Total fiscal revenue actually observed in Tunisia in 1997 was 4.038 billion dinars, an increase over 1996 (3.596 billion dinars) despite a loss of customs revenue. The Tunisian government had taken steps to offset the forecast fiscal loss. On the revenue side, after introduction of the temporary duties, it reorganised the VAT system (average, spread, efficiency of collection). Subsequently, it plans to re-examine direct taxes. On the expenditure side, the public wage bill will be controlled, consumer subsidies will be reduced and the privatisation programme will resumed to decrease transfers to the public enterprises.

The government's room for manoeuvre to compensate for the tariff loss is relatively limited. Above all, the macroeconomic gains of previous stabilisation have to be preserved: the main element of this strategy is a refusal to reschedule foreign debt, with a corollary of maintaining the stability of the real exchange rate. This policy has allowed Tunisia to become one of the countries able to borrow funds on foreign markets. The ninth plan thus provides for further deficit reduction: the net fiscal balance will go from -3.9 per cent of GDP in 1996 to -2 per cent in 2001, and the current account deficit from -2.9 per cent to -2.2 per cent. Another major consideration of the government is preserving social tranquillity. Although Tunisia has one of lowest population growth rates in the Arab world, the labour force is growing by approximately 2.9 per cent per annum, and the official unemployment rate exceeds 15 per cent. Tunisia must therefore maintain its social protection, which is based on consumer subsidies and on triennial wage agreements instituted in 1993 between the government, unions and employers, which set wage increases by sector.

Tax Reform

On the strictly fiscal level, the government has several instruments available. First, domestic taxes, which are not controlled by GATT, can provide at least partial and temporary compensation for the fall in customs revenue. However, an overhaul of the tax system must not increase the tax burden (20 per cent of GDP), since the Tunisian tax level is already high compared to the regional average.

Various indirect taxes were replaced by VAT from 1988. Excise taxes remain on a decreasing number of products; henceforth, they apply to luxury goods, alcohol and tobacco, beverages (coffee, tea), fuel and private cars (but at rates ranging from 30 per cent to 295 per cent). These excise taxes were also used to compensate for the elimination of quotas and the decrease in the maximum customs tariffs from 200 to 43 per cent. They should be eliminated soon except for cars. The minimum VAT rate was also raised when imports of capital goods having no domestic equivalent were unilaterally made duty-free in 1996: a 10 per cent VAT simply replaced the customs duty of 10 per cent.

Furthermore, tax reform is moving to simplify the rates of taxation. The VAT went from four rates (6, 10, 17 and 29 per cent) to three in 1995, via a hike in the minimum rate (which applies to capital goods, private cars of less than four horsepower and tourism). In 1997, the intermediate rate of 17 per cent, which accounts for four-fifths of receipts, was raised by one point. In 1999, the higher rate will be reduced on some products from 29 per cent to 18 per cent. Eventually, the VAT should have one or two rates, around 18 per cent, leading to an average rate three points higher than in 1998. To a first approximation, a point of VAT brings in 80 million dinars: a three-point rise would thus compensate for 60 per cent of the total fiscal loss during the period. This calculation ignores any growth effects. A more complete estimate, in general equilibrium terms, will be presented later.

Although the reform of VAT rates is reaching completion, the efficiency of collection can still be improved. The current VAT does not apply to exports or agricultural goods. However, it has been gradually extended to services: non-commercial professions, goods transport, IT services (1995) and volume retailing (July, 1996). Withholding at source was introduced for government contracts. VAT is refunded rapidly for offshore companies and sales in suspension (where a tax credit is granted to a company which invests), but in general refunds can take up to 12 months. Moreover, collecting VAT on imported goods remains easier than on domestic goods; in 1997, 52 per cent of VAT receipts came from imported goods.

Direct taxes accounted for only one-fourth of revenue in 1997. The two corporate tax rates (10 per cent and 35 per cent) will be harmonised: the minimum rate was increased to 20 per cent in 1998 and eventually a single rate will be instituted. However, the tax base is still small. Indeed, aid for investment mainly consists of tax exemptions. Companies under the offshore regime pay no taxes for 10 years, after which the rate will be 17.5 per cent. SMEs pay a lump sum for VAT and corporate tax. To decrease tax avoidance, mechanisms such as at-source withholding have been introduced for public contracts, payments by public enterprises or housing rental income. In the absence of great improvement in the collection rate of direct taxes, fiscal adjustment during the transition will therefore be mainly based on VAT.

Expenditure

With respect to expenditure, the government's room for manoeuvre is also limited. Expenditure on infrastructure needed for industrial expansion will be maintained. The only possibilities of reduction could come from a civil service hiring freeze and privatisations. Transferring public enterprises to the private sector would permanently reduce state transfers (income from sales could also be used for debt reduction), but the privatisation programme really got under way only in 1998 with the sale of two cement works.

Consumer subsidies now apply to only a few products, and there are plans to reduce them again and keep only those on seed oil and semolina, while compensating the poor by direct transfers. Subsidies dropped from 4.2 per cent of GDP in 1984 to

1.5 per cent in 1998, the objective being to reach 1 per cent in 2001. This objective is realistic if the prices of cereals remain low, which is not certain if the United States and Europe abolish their agricultural subsidies in accordance with the Uruguay Round. Moreover, as the subsidies are based on world prices of cereals, their cost is very sensitive to fluctuations in the dollar[11].

Simulations of Ways of Compensating for Tariff Losses after the Euro-Mediterranean Agreement

We simulated the tariff dismantling contained in the Euro-Mediterranean agreement with our model, as well as various ways of compensating for tariff losses (see Table 3.2). A first scenario (*NONEU*) presents the evolution of Tunisia without the Euro-Mediterranean agreement but including the effects of GATT provisions and the dismantling of the Multi-Fibre Agreement. This scenario provides a useful counterfactual view of the situation without the Euro-Mediterranean agreement. To this, the *EU* scenario adds the tariff dismantling under the Euro-Mediterranean agreement. This simulation is not to be interpreted as a dynamic version of the scenario presented in Chapter 2, since scenario *EU* lets the public deficit vary, in order to estimate fiscal losses.

Table 3.2. **Scenarios of Fiscal Compensation after the Euro-Mediterranean Agreement**

	NONEU	EU	INCURB	INCTOT	TVA	TVAU	TVAUS	GOVT
VAT	4.20				7.60	4.40	3.20	
Inc. tax rural household	0.00		0.00	9.20				
Inc. tax urban household	4.00		11.90	9.20				
Public expenditure	10.20							5.5
GDP [a]	5.75	5.47	6.01	6.00	5.88	5.82	5.89	6.07
Total imports [a]	5.84	6.66	7.11	7.09	6.84	5.59	6.16	7.50
Imports from EU	5.85	7.40	7.87	7.85	7.62	6.29	6.91	8.25
Imports from ROW	5.80	3.85	4.22	4.18	3.83	2.92	3.27	4.64
Total exports[a]	7.69	8.58	9.05	9.03	8.76	7.42	8.03	9.46
Exports to EU	7.96	7.58	8.61	8.58	8.81	7.02	7.90	8.53
Exports to ROW	6.56	11.34	10.47	10.46	8.56	8.74	8.53	12.09
Consumption [a]	5.25	5.35	5.36	5.37	5.32	5.26	5.34	5.75
Investment [a]	5.87	4.90	6.55	6.54	6.16	5.92	6.22	6.76
Rural income[a]	5.39	5.43	5.80	5.09	5.39	4.88	5.00	6.04
Urban income [a]	5.57	5.69	5.58	5.82	5.66	5.71	5.81	6.05
Tariff revenue [b]		-5.69	-5.75	-5.79	-5.71	-6.22	-6.19	-5.54
Tax revenue [b]		-5.07	0.55	0.57	-0.30	1.64	0.80	-4.66
Public deficit [b]		-5.68	0.17	0.17	-0.18	-0.29	-0.31	0.01

Notes: *a)* growth rate.
b) difference from level of scenario NONEU in 2010, in GDP percentage points. VAT rate (VAT + domestic taxes) calculated as percentage of output; public expenditure as proportion of the 2010 GDP. Values of income taxes and public expenditure identical to NONEU except when noted. NONEU: without Euro-Med agreement; EU: Euro-Med agreement with uncompensated tariff revenue losses; INCURB: Euro-Med agreement + rise in direct taxes on urban households; INCTOT: Euro-Med agreement + rise in harmonised direct taxes on urban and rural households; TVA: Euro-Med agreement + rise in VAT and other domestic taxes; TVAU: Euro-Med agreement + rise in harmonised VAT and other harmonised domestic taxes; TVAUS: TVA + elimination of production and consumption subsidies.

In the following simulations, an increase of 5.7 per cent of GDP in the public deficit compared to its value without the Euro-Mediterranean agreement is then compensated by different policies. The first two scenarios explore an income tax reform. Originally, it is assumed that this tax is only paid by urban households and, because of various exemptions, at an average rate of 4.1 per cent (of income). If income tax continues to be paid only by some households, it would be necessary to triple this rate to compensate for the tariff-related losses (scenario *INCURB*), whereas if income tax is paid by all households, the average tax rate after generalisation would be 9.2 per cent of pre-tax income (scenario *INCTOT*). These two scenarios project a favourable context for wages, especially urban wages, all the more so since the cost of living decreases. Urban household income does not fall compared to the reference scenario, even when these household pay more tax (obviously, this simplified framework does not take into account the fact that income tax is unequally distributed even among urban households). On the other hand, rural households obviously have everything to lose from taxation of their income. Nevertheless, total household consumption does not decrease in the generalised direct tax scenario (*INCTOT*).

As was noted above, VAT will most probably be the instrument used by the Tunisian authorities to ensure the continuity of revenue. At present, because of various exemptions, VAT represents a little more than 4 per cent of the value of output. If the burden of tariff compensation were to fall entirely on the current VAT structure, VAT would have to amount to 7.6 per cent of output (scenario *TVA*), or a nominal rate of about 25 per cent, instead of the current 15 per cent. In contrast, if the VAT rates are harmonised, as planned (we assume here that they change to a single rate), the average VAT rate can remain virtually unchanged (scenario *TVAU*).

An increase in VAT affects incomes more than a change in direct taxes. It acts through different channels: the VAT has a direct effect on consumption; moreover, it decreases businesses' profits and wages. These indirect effects are well captured by general equilibrium modelling. We found that a single (and higher) VAT hits agricultural income harder than generalisation of the income tax to this category of households. On the whole, the scenarios of compensation by the VAT lead to a deceleration of consumption, exports and investment compared to the direct taxation scenarios. Moreover, when the VAT is standardised (*TVAU*), trade growth is lower than in the scenario without a Euro-Mediterranean agreement. A VAT reform together with abolition of production and consumer subsidies (*TVAUS*) lessens these effects and revives final demand.

Finally, adjustment by reducing public expenditure has the beneficial effects that can be expected in this analytic framework, where government expenditure in itself does not increase the well-being of households but only contributes, through public saving, to decreasing the country's investment capacity (scenario *GOVT*).

To sum up, this simulation exercise, which can be refined by a detailed examination of changes in tax rates and in actual collection, leads to doubt as to the validity of fiscal compensation primarily based on the VAT. In a second-best world,

where the reforms add to existing distortions, it is not certain that a standardisation of the VAT rate would be more efficient and equitable than an increase which leaves the current rate structure unchanged. Moreover, compensation by an income tax would generate greater efficiency gains than the VAT without drastically decreasing household income (this is the case, at least, in our analytic framework limited to two groups of households).

Agricultural Liberalisation[12]

Although agriculture accounts for a substantial share of the Tunisian economy, it remains outside the scope of the Euro-Mediterranean agreement until 2000. In 1996, the agriculture and the agri-food sectors together represented 22 per cent of value added and 38 per cent of household consumption expenditure. The current agricultural policy could be called into question in the future by the Euro-Mediterranean agreement. Indeed, in order to compensate for the tariff losses, a complete review of the system of consumer and producer subsidies (primarily for food goods) is on the horizon. More fundamentally, the Euro-Mediterranean agreement, by strengthening regional security, could lead Tunisia to give up its policy of food self-sufficiency.

Agriculture and Agricultural Policies in Tunisia

Tunisia has few natural resources favourable to agricultural development. Most of the arable land (a total of 5 million hectares) is in arid or desert regions. Erosion and desertification ultimately constitute major obstacles to the development of Tunisian agriculture. These handicaps are compounded by urbanisation, which diverts arable land, labour and water from agricultural activities. Water is an increasingly rare resource and the problem of its availability is likely to worsen greatly during coming years, because Tunisia is arriving at the upper limit of the quantities of water which can be used without risk of exhausting its reserves (COMETE Engineering, 1996).

Agriculture is dominated by olives (15 per cent of total agricultural production), livestock and field crops (cereals, fodder, leguminous plants and market crops). Hard wheat is the principal field crop produced in Tunisia (11 per cent of total agricultural production). Imports are mainly products of field crops: soft wheat alone represents 38 per cent of total agricultural imports. Tunisia exports fruit (dates and, to a lesser extent, citrus fruits) and fishery products, these two items representing almost 80 per cent of total agricultural and fishery exports. The agri-food sector is dominated by meat (20 per cent of the branch's total production), grain processing (18 per cent) and oils and fats (19 per cent). Tunisia's agri-food imports are mainly vegetable oils (29 per cent of total agri-food imports), sugar (21 per cent) and dairy products (18 per cent). It exports olive oil (approximately 52 per cent of total agri-food exports) and tinned goods (24 per cent).

The EU absorbs 77 per cent and 63 per cent of Tunisia's exports of agricultural and agri-food products respectively. On the other hand, only 39 per cent and 40 per cent of Tunisia's agricultural and agri-food imports are from Europe. The potential gains in market share under stronger preferential arrangements are thus much greater for European producers than for Tunisian producers. This also means that Tunisian export outlets largely depend on EU decisions on its own agricultural policy.

In the following paragraphs, we will discuss in detail the aspects of Tunisia's agricultural policy which are most likely to be modified during next few years under the Euro-Mediterranean agreement.

Prices

The agricultural and fishery sector is subject to two types of price controls: on producer prices and on the prices of agricultural inputs. There are two regimes for regulating producer prices. In the first, which deals with cereals and milk, the state fixes a minimum guaranteed producer price at the beginning of each season. It is generally higher than the world price. In the second (sugar beets and tobacco leaves), the price is also fixed, but in contrast to the first regime, producers have no alternative but to sell their output at this price to a public collection agency. The minimum guaranteed producer prices has provided adequate remuneration to producers of these products and protected them from fluctuations in world prices. It has also served since 1970 to ensure that price trends for agricultural products remain close to those for industrial products and to maintain farmers' purchasing power.

The state also subsidises the use of agricultural inputs to promote intensive agriculture and limit production costs. For example, fertilisers and pesticides are sold to farmers at prices less than cost, owing to public subsidies, and charges for water distributed in irrigated areas are far below the operating costs of the hydraulic infrastructure.

Structural adjustment efforts in agriculture since 1986 have aimed at bringing producer prices closer to world prices by decreasing subsidies, but support for agricultural production is considered strategic and was still very high in 1992. According to Lindert and Tuck (1996), the producer subsidy equivalent (that is, the difference between the world price and the domestic producer price) was 45 per cent for hard wheat, 32 per cent for soft wheat and 14 per cent for sugar.

There have been two major phases in agricultural marketing policies since the early 1960s: first, strict control (state monopoly, public control over the collection, import, export and distribution of products); then since 1986, gradual liberalisation and encouragement of private initiative. Every product having a controlled producer price also has a controlled consumer price. This is in particular the case for necessities like cereals and milk. Other goods, such as livestock products, fruit and vegetables, are regulated only at the consumption level by the setting of a maximum price.

Trade Protection

Besides producer and consumer subsidies, agriculture is protected by specific means: state monopolies were established in the 1960s for importing cereals and oils, and a tariff policy which established different tariffs depending on the quantity imported (tariff quotas) and the time of year. In short, the domestic market has been largely insulated from the trends and fluctuations of the world market. Chemingui and Dessus (1999) estimated the agriculture import barriers at a detailed level. Non-tariff protection benefits sugar (with a tariff equivalent of 28 per cent), followed by hard wheat, barley, soft wheat, vegetables and tinned goods. Customs tariffs are generally high for fruit, forestry products, tobacco, meat, dairy products, products processed from grains, tinned goods and beverages. They are lower for cereals, livestock, oils and sugar, four categories which alone represent nearly 60 per cent of agricultural imports.

Tariff and non-tariff barriers are modelled in traditional fashion, as a tax on imports. In the case of tariffs differentiated according to quantity imported, the relationship is a little more complex. It amounts to defining the average tariff as the average of the preferential and non-preferential rates weighted by the amount imported in each quota. As the imports subject to tariff quotas are administered by a public agency, we assume that the average tariff is passed on to the domestic price of the imported product, in order not to penalise one type of importer over another. This average tariff is thus endogenous in the model, following the total amount of imports.

Tunisian Agriculture in the Absence of Reforms

In the reference simulation described earlier in this chapter, agricultural activity does not seem able to profit from the increasing openness of the Tunisian economy to trade, despite or because of substantial public support. Domestic demand for agricultural products, which grows over time (owing in particular to population growth), turns towards domestic products, which are subsidised and protected. Thus the agricultural sector's limited capacity encourages producers to devote an increasingly greater share of their production to the domestic market, to the detriment of foreign markets: the volume of agricultural exports tends to decrease. In the absence of new incentives for substituting agricultural imports from one source to another, the proportion of agricultural imports from the rest of the world remains stable, around 60 per cent. The distorting effects of sectoral incentives to agriculture keep growth in this sector quite low. This has negative consequences for the agri-food industry, which largely depends on domestic agriculture. Agricultural, agri-food and industrial outputs will grow at the average annual rate of 3.3 per cent, 4.6 per cent and 7 per cent respectively between 1992 and 2010.

As we already pointed out, factor reallocation is conducted exclusively by industry, which experiences a much greater external shock than agriculture from the Euro-Mediterranean agreement. This reallocation can be measured in particular by changes in the composition of the vectors of production in each of the two sectors; the magnitude

of this vector is nine times higher in industry than in agriculture. An increasingly larger proportion of mobile factors of production (physical capital and casual labour) is captured by industry, which obtains larger markets, especially abroad. Consequently, remuneration of labour increases more quickly in the non-agricultural sectors than in agriculture. Household incomes feel the effect of this. However, owing to slower growth of the rural population and of the rent which protection of agriculture offers to owners of arable land, the gap in real per capita income between urban and rural households tends to narrow (from a factor of 1.8 in 1992 to 1.6 in 2010). Consumers of agricultural products are penalised in this reference scenario: consumer prices of agricultural products rise 9 per cent between 1992 and 2010, while prices of industrial products fall by 9 per cent[13].

Agricultural Reforms

We now test the impact of various agricultural policy reforms which could be anticipated in the context of a stronger partnership between Tunisia and the European Union, and which will undoubtedly be discussed from the year 2000. The macroeconomic results of these reforms are given in Table 3.3. The first two, reducing tariffs (*TARAG*) and agricultural support (*SOUAG*), could be undertaken unilaterally by Tunisia. It would be in Tunisia's interest, however, to limit the costs of these domestic reforms by making them conditional on a counterpart from the European Union. This counterpart could take the form of increased access to the European market for Tunisian agricultural exports (*EUAG*).

First, each of the three reforms is studied separately to try to measure and understand its specific impact on the Tunisian economy. A fourth simulation combines these three reforms. A fifth simulation combines the three reforms with unilateral reduction of tariffs on agricultural and industrial imports from the rest of the world, in order to measure the amount of income foregone by entering into a preferential agreement with the European Union alone.

Table 3.3. **Macroeconomic Results of Agricultural Reforms**

	1992	2010	TARAG	SOUAG	EUAG	MUTAG	UNI
Real GDP	12.31	33.67	33.56	33.94	33.68	33.83	34.06
Total production	27.17	75.57	74.82	78.29	75.08	76.71	80.13
Private consumption	9.82	26.43	26.60	26.68	26.53	26.96	27.46
Investment	3.65	8.96	8.79	9.22	8.98	9.05	9.21
Public consumption	2.19	2.87	2.87	2.87	2.87	2.87	2.87
Exports	4.23	17.27	17.59	18.18	17.08	18.19	19.75
Exports to EU	3.33	11.91	12.54	12.13	11.91	12.86	12.38
Exports to ROW	0.89	5.36	5.04	6.05	5.17	5.34	7.37
Imports	6.10	18.17	18.49	19.08	18.13	19.27	20.83
Imports from EU	4.53	15.19	16.01	16.00	15.12	16.70	15.63
Imports from ROW	1.57	2.98	2.48	3.09	3.01	2.57	5.20
VAT revenue	0.90	2.46	2.94	1.87	2.48	2.41	2.84
Tariff revenue	1.13	1.00	0.42	1.00	1.02	0.43	0.04
Stock of physical capital	24.62	81.35	81.00	82.23	81.39	81.88	82.64
Rural real disposable income	776	1 751	1 733	1 706	1 801	1 755	1 771
Urban real disposable income	1 397	2 862	2 890	2 930	2 852	2 939	3 006
GDP deflator	1.00	1.01	0.98	1.02	1.01	1.01	1.01
Labour remuneration							
Agricultural family	1.00	1.68	1.56	1.68	1.76	1.67	1.65
Agricultural unskilled	1.00	1.70	1.62	1.71	1.72	1.65	1.62
Agricultural skilled	1.00	2.37	2.22	2.46	2.38	2.33	2.26
Casual unskilled	1.00	1.72	1.67	1.78	1.72	1.74	1.77
Non-agricultural skilled	1.00	1.78	1.74	1.76	1.79	1.73	1.74
Remuneration of capital							
Natural resources	1.00	2.59	2.50	2.70	2.58	2.59	2.65
Dry land, annual	1.00	6.10	5.07	3.84	6.19	3.25	3.16
Irrigated land, annual	1.00	3.67	3.22	3.81	3.62	3.26	3.32
Dry land, perennial	1.00	3.34	2.49	3.65	6.15	6.00	5.83
Irrigated land, perennial	1.00	3.16	3.19	3.28	2.56	2.63	2.54
Land for date palms	1.00	6.01	5.89	6.20	5.95	5.98	6.07
Forests	1.00	8.51	5.89	9.23	8.43	6.26	5.69
Physical capital	1.00	0.80	0.80	0.82	0.79	0.81	0.81
Variation in well-being (%)							
Rural household			-1.1	-3.2	2.7	-0.5	0.2
Urban household			1.0	2.1	-0.5	2.4	4.5
Total			0.3	0.5	0.3	1.2	2.5

Note: Macroeconomic aggregates are given in billions of 1992 dinars. Real disposable incomes are per capita disposable incomes in 1992 dinars, divided by the consumer price index of each area. 1992 and 2010: values of the variables for these two years in the reference scenario (Euro-Med agreement with tariff loss compensated by a rise in harmonised VAT). TARAG: gradual dismantling of the customs duties on European agricultural products; SOUAG: gradual elimination of support for agriculture; EUAG: lifting of quotas applied by the EU on Tunisian agricultural exports; MUTAG: TARAG+SOUAG+EUAG; UNI: MUTAG + gradual dismantling of customs duties on agricultural and industrial products from the rest of the world.

Abolition of Tariff Barriers for Agricultural Imports from the EU (TARAG)

This scenario provides for gradually reducing the preferential and maximum customs tariffs on agricultural and agri-food imports from the European Union between 2001 and 2010. Relative to the reference scenario, these tariffs are reduced by 25 per cent in 2001, by 50 per cent in 2004, by 75 per cent in 2007, and they are abolished in 2010.

This reform has a moderate macroeconomic impact. Total economic activity is not greatly affected (real GDP declines by 0.3 per cent compared to its 2010 reference level). The loss of tariff receipts is about 8 per cent of total state revenue in 2010. This loss is compensated by a 20 per cent increase in the average VAT rate. The strengthening of preferences for the European Union leads to a small increase in the total volume of imports. These new imports come exclusively from Europe and consist mainly of agricultural products like soft wheat, milk, oils, sugars and other agri-food products that had formerly been highly taxed. The volume of agricultural imports from the rest of the world decreases, but to a lesser extent than the increase in imports from Europe. Agricultural production decreases. In other words, consumers substitute European imports for both imports from the rest of the world and domestic products. Faced with greater competition, Tunisian agriculture seems to be incapable of reallocating its resources to more competitive products, owing to the impossibility of reallocating plots of land to other crops, the strong concentration of the domestic support system in the sectors which become exposed to European competition, and limited foreign markets.

Industry does not compensate for these losses, since it must deal with two handicaps: increased taxation and weaker domestic demand, which substitutes less expensive agricultural products for industrial products. Industry is not affected as much as the rural economy, however, and it also benefits from tariff harmonisation. Factor demand in agriculture is appreciably reduced. Agricultural wages drop but less than the remuneration of land, because of the greater mobility of labour. Incomes of landowners are seriously affected. The real income gap between urban and rural households increases. The limited capacity for agricultural sector adjustment induces the Tunisian economy to depreciate its real exchange rate to restore equilibrium to the balance of payments. In other words, Tunisia's purchasing power for foreign products decreases. In terms of well-being, this reform leads to a 1.1 per cent loss for rural households and a 1.0 per cent gain for urban households compared to their reference disposable incomes in 2010.

Reduction in Support for Agriculture (SOUAG)

In this simulation, public support for agriculture is gradually reduced between 2001 and 2010. Producer and consumer subsidies are reduced at the same pace as in the preceding simulation. The reduction of support for agriculture represents a gain in revenue equivalent to 11 per cent of total public revenue. The average VAT rate is reduced accordingly. The macroeconomic impact is small but positive (a 0.8 per cent

gain in GDP in 2010). The main consequence of this reform is to reduce agricultural output in the activities which were previously supported (hard wheat, soft wheat, milk, sugar) or which received an indirect subsidy of their intermediate consumption (flour milling).

For reasons similar to those in the preceding simulation, the fall in factor demand in the sectors affected by the reform is not compensated by a sufficient rise in demand in other agricultural sectors: the sectors affected by the reform remain highly favoured in terms of real effective protection, and the potential markets for other agricultural products are limited by EU trade barriers. Thus total agricultural output drops, even though some sectors (livestock, meat, other cereals, other agri-food products) benefit from positive substitution effects.

In contrast, the industrial sector seems to benefit from this reform: it is helped by the lower tax burden, and domestic demand increases since the reduction in support for agriculture makes industrial products more competitive. Therefore, an increasing proportion of mobile factors is cornered by industry and, once again, the income gap between urban and rural households increases. Remuneration losses are particularly concentrated on one factor: dry land for annual crops, which is mainly used cultivating cereal grains. The effect on agricultural wages is only slight, however, which seems to indicate that support for agriculture mainly benefits landowners who cultivate cereals. The well-being of rural households in 2010 falls by 3.2 per cent compared to rural households' reference disposable income at that time. By contrast, decreased support for agriculture turns out to have a positive impact on the well-being of urban households, reaching +2.1 per cent in 2010 compared to the reference situation.

The European Union also benefits from this reform, because of its position as a preferred supplier of industrial products. EU exports of agricultural products to Tunisia do not increase, since external barriers remain unchanged. The increase in Tunisia's total import volume (+5.3 per cent compared to the reference level in 2010) is almost exclusively made up of European industrial products. It is compensated by an increase in exports of industrial products to the European Union and the rest of the world. These exports have become more competitive due to the decrease in VAT, without resorting to real depreciation. In other words, decreasing support to agriculture makes it possible to increase Tunisia's industrial competitiveness sufficiently (through lower taxes) and compensates for the rise in imports stemming from the enhanced income of urban households.

Greater EU Access for Tunisian Agricultural Exports (EUAG)

We have just observed that the two reforms considered by Tunisia benefit the European Union. The abolition of tariffs on EU agricultural exports automatically increases their competitiveness in the Tunisian market; reduced support for agriculture increases Tunisian demand for industrial products due to substitution effects, which particularly benefits the EU because of the preference for its products provided by Tunisia under the Euro-Mediterranean agreement.

Let us assume that Tunisia is able to demand a counterpart from its European partner. This would require a reform of the Common Agricultural Policy (CAP), but only a minor one because of the small stakes involved[14]. For example, there could be a reform of measures specifically dealing with Tunisian products, such as quotas on vegetables, oils and beverages.

In our model, the European Union's demand is not explicitly specified. We use the small country hypothesis, which means that Tunisia determines its volume of exports according to the price of Tunisian exports on the European market. This price is exogenous, but when the exchange rate is unchanged Tunisia acts on the unit price which it receives, depending on the quantity exported. When this exceeds the quantity for which a preferential rate applies, Tunisia in effect increases the average tariff to which it is subject. To continue to sell at a given international price, Tunisian producers must accept a lower pre-tariff export price and therefore make efforts to increase competitiveness. An equilibrium is reached when the export price minimises the production cost.

We simulate a progressive reduction of the EU's preferential and maximum tariffs on Tunisian exports of the products mentioned above between 2001 and 2010, at the same pace as in the preceding simulations.

This reform has no impact on economic activity or the fiscal balance. The major impact is on olive oil exports, which increase by 150 per cent in 2010 compared to the reference volume, with a 40 per cent increase in unit remuneration. The beverage sector also benefits from this reform, but to a lesser extent. This rise in external demand leads to increased demand for the factors of agricultural production and to increased remuneration of these factors. Mobile factors also shift to the agricultural and agri-food sectors. The income gap between urban and rural households is reduced. The impact on well-being of rural households is now very positive (+2.7 per cent compared to the reference scenario in 2010), but slightly negative for urban households (-0.5 per cent).

Agricultural and agri-food products shift towards the export sector. The resulting reduction of output in sectors competing with imports is compensated by a rise in imports of agricultural products. Altogether the volume of foreign trade tends to decrease, however, because of the appreciation of the real exchange rate, which is due in particular to the rise in agricultural wages (and in urban wages through a contagion effect). The volume of industrial exports and imports decreases.

This reform is therefore quite favourable to Tunisian agriculture, but its impact remains limited, because reallocation of agricultural factors towards growth sectors is impeded by the incentives given to Tunisian farmers to compete with European producers. We now simulate the combined impact of the three reforms just discussed.

A Mutual Reform of Agricultural Trade between Tunisia and the European Union (MUTAG)

This combined reform extends the impact of the separate reforms. It has little macroeconomic effect (+0.5 per cent of GDP in 2010), and its effect on the fiscal balance is similar to the sum of the negative impact of tariff reduction and the positive impact of reduced agricultural subsidies, that is, in total, a small decrease in the VAT rate.

Shifts of agricultural factors are more numerous. Agriculture devotes a much larger proportion of these resources to export crops. The volume of food oil exports[15] is multiplied by a factor of three compared to the reference level in 2010, and beverages by a factor of two. These two sectors alone account for a majority of the increase in agricultural and agri-food exports (total agricultural exports grow 33 per cent). However, agricultural output in formerly protected and subsidised activities is greatly reduced relative to the reference situation. Hard wheat and, to a lesser extent, other market crops are especially affected: their volume of production in 2010 is lower than that observed in 1992. The position of the losing sectors (soft wheat, milk, sugar, flour milling, other agri-food products) declines relative to the reference scenario in 2010, but nonetheless their output tends to grow over time. Imports compensate for the fall in output in these sectors, and total agricultural production decreases by 2 per cent compared to its reference level in 2010. Thus greater access to the European market does not entirely compensate for the negative effect of agricultural liberalisation, despite the weaker institutional constraints on factor reallocation within the agricultural sector. The relative loss of well-being is -0.5 per cent for rural households. The relative gain for urban households is +2.4 per cent. The aggregate gain in well-being is +1.2 per cent of the reference GDP in 2010.

The Tunisian industrial sector benefits considerably from the agricultural sector's liberalisation, and its output increases by 7 per cent in 2010 compared to the reference scenario. A significant proportion of resources is captured by industrial activity and remuneration of urban factors grows appreciably.

The European Union also obtains ample benefits from the combination of these reforms: its exports to Tunisia increase by 10 per cent in 2010 compared to their reference level. Its imports from Tunisia also increase, but to a lesser extent, so that Europe's balance of trade with Tunisia increases by 0.5 billion 1992 dinars in 2010 compared to the reference situation. The EU benefits from stronger preferential arrangements and an increase in domestic demand. The volume of exports to Tunisia by the rest of the world decreases, so that there is an absolute trade diversion effect. This effect is slightly smaller than in the simulation of unilateral liberalisation of agricultural trade with Europe, because of a smaller income loss, which tends to limit the decline in Tunisian demand for products from the rest of the world.

Multilateral Reform of Agricultural and Industrial Trade (UNI)

This last scenario simulates the three reforms modelled previously plus a reduction in customs tariffs on agricultural and industrial products from the rest of the world similar to that hitherto reserved only to European products.

In this last scenario, Tunisian agriculture definitively embarks on the process of globalisation. A larger proportion of its resources is devoted to export crops, whose volume increases by 40 per cent compared to the reference scenario in 2010. Although fewer mobile resources are devoted to agriculture as a whole than in the preceding and reference scenarios, they are used better and their remuneration decreases less quickly than consumer prices. Consequently, the real income of rural households increases. In general, the country opens up to trade: total exports increase by 14 per cent and imports by 15 per cent. GDP increases by 1.2 per cent, despite an increase in VAT. For the first time, the change in well-being is positive for both types of Tunisian households. They nonetheless remain unequal: the gain in well-being of urban households is equivalent to a 4.5 per cent rise in their disposable income, against only 0.2 per cent for rural households. In absolute terms, the gap is even more apparent, since the marginal benefit of the reform is approximately 80 times higher for urban households than for rural households. The aggregate well-being gain is equivalent to a 2.5 per cent increase in GDP compared to the reference scenario in 2010.

The great difference from the preceding scenario is obviously the absence of a trade diversion effect. The share of imports from the rest of the world increases appreciably compared to the reference scenario. Europe continues to benefit from Tunisian domestic reforms, but its exports increase less quickly than in the preceding scenario. Its balance of trade with Tunisia remains positive and unchanged compared to the reference scenario in 2010. It is likely, however, that the rise in Tunisian household income benefits Europe in another way, namely, with respect to migratory pressures.

A last scenario could be considered: liberalising agriculture and industry with respect to all its partners without waiting for a counterpart from the EU. This policy obtains less in the way of aggregate gains in well-being than does the preceding one (2.1 per cent against 2.5 per cent), and it is particularly unfavourable to rural households, whose well-being clearly declines (-3.1 per cent) compared to the reference scenario in 2010 (results not reported).

The reform of Tunisian agriculture is therefore viable only if it is accompanied by greater access to the European market for its export products. Tunisia's institutional anchoring to the European Union gives the country an opportunity to abandon a food security policy which is costly but which reduces the loss of purchasing power of rural households compared to the more favoured urban households. Consequently, no policy change can be considered if it further harms rural incomes, which directly or indirectly concern a quarter of the population. With high transition and redistribution costs (Rutherford, Ruström and Tarr, 1995), it is probably more suitable to promote any policy which, for similar aggregate gains in well-being, works directly in favour of the rural economy.

In the context of consolidating the partnership with the EU, Tunisia could request a counterpart to decrease the cost of the agricultural reform for its rural households. This is justified by the limited capacity for reallocation and adjustment of Tunisian agriculture. Its comparative advantage seems to lie in tree crops and their derivatives (specifically olives), but its productive capacity is limited by the nature of this type of crop (where return on investment takes a very long time) and the natural resources constraint. Moreover, its potential markets are greatly hampered by the quotas maintained by the European Union under the CAP. Since liberalisation of Tunisian agriculture would clearly benefit the EU, it could in return open its markets to Tunisian exports in the forthcoming negotiations[16].

The fact that the development of Tunisian agriculture depends mainly on trade relations with the EU does not mean that Tunisia cannot benefit from multilateral trade liberalisation. If it granted the same trade preferences to its other partners, it would maximise its potential for growth and minimise the losses for agriculture. It would also eliminate any possibility of not conforming to the WTO rules on the compatibility of regional agreements with the principle of non-discrimination. The European Union would lose in terms of export markets but would gain in terms of Tunisia's stability and economic development, which initially was the EU's principal reason for wanting to strengthen its partnership with this country.

Conclusion

The case of Tunisia illustrates the strong link between domestic and external liberalisation. The association agreement is part of a larger process of transition to a market economy. In this more comprehensive dynamic of transformation, it is difficult to distinguish between the share due to the association agreement and that due to the EU's development co-operation alone. No major changes occurred in Tunisia during the first two years of the agreement. A loss of tariff revenue was compensated by a rise in domestic revenue. There was some growth in trade with the EU. The balance-of-trade deficit increased, but it is difficult to estimate the share attributable to tariff dismantling. In fact, the greater part of this effect is expected to come later on, because of the transition schedule. Nevertheless, signs already can be observed: a potential rise in final demand for imported goods, as well as the growth in investment in the sheltered sectors of commerce and real estate.

The transition raises two sorts of methodological problems[17]. One is related to its structure, i.e. with the successive tariff dismantling for four types of products. Dismantling some sectors before others is not neutral. This particular dynamic structure, which is expected to form part of future association agreements, is very important. The impact of tariff dismantling, especially on government revenue, will not be linearly distributed in time. There could also be less revenue loss than expected because of the economy's ability to adjust.

Moreover, the consumption or investment behaviour of agents can be influenced by a temporary rise in the effective protection given to some sectors. General equilibrium calculations show that the rise in effective protection does not really affect industry, but rather the sectors left out of the association agreements: services and agriculture.

In the case of agriculture, it would seem to be in Tunisia's interest not to delay the inevitable reform of its domestic support policy. In the course of time, the increase in effective protection and the widening income gap between households would make any reform increasingly difficult. In contrast, domestic liberalisation of Tunisian agriculture would be greatly facilitated by the inclusion of this sector in the scope of the agreement with the European Union.

Notes

1. The threshold is fixed at 80 per cent for manufactured goods and services and 70 per cent for agricultural goods. The enterprises in the offshore category are mainly small textile companies.
2. Their exports are more traditional (dates, olive oil) and marketed in the Middle East.
3. The import regime for motor vehicles is a special case, subject to various domestic and external taxes at prohibitive rates. Since there is no domestic production, this taxation is intended to create revenue for the state. Moreover, compensatory agreements guarantee purchases of Tunisian spare parts by European producers. These agreements should be eliminated in 2001.
4. In particular, Euro-Tunisienne Entreprises (ETE), which was to play a consultancy role similar to that of the Tunisian modernisation bureau (the COPIL), is still not operational (discussions with various contacts during an assignment in Tunisia, November 1998).
5. The invitation to tender has to be submitted to Brussels for an opinion, then published in the *Official Journal* of the European Communities. The final choice must also be approved by Brussels. The whole procedure can take two years.
6. Such collusion between European importers or producers is feared by Tunisians, at least for some specific products, like automobiles. Similarly, in the absence of real competition in the distribution sector, collusive price-fixing is possible for some products in this sector.
7. Of these, 350 are in the clothing industry, 150 in hosiery and 40 in textiles.

8. For example, Devarajan *et al.* (1997) assume elasticities between imports (or exports) and domestic goods of 0.6, and they vary the elasticities for imports from different sources between 2 and 4.

9. The difference between the high and low assumptions mainly comes from the response capacity of exports (i.e. the elasticity of transformation between domestic production and exports), rather than from transferring domestic consumption to imports.

10. This tariff loss is calculated relative to the 1995 amount. Another indicator would be the tariff loss relative to the probable revenue without the Euro-Mediterranean agreement. The CGE model can quantify this loss at approximately 67 per cent of the tariff revenue expected in 2010 without the Euro-Mediterranean agreement (for all assumptions about elasticities).

11. During the 1995-96 rise in exchange rates, it was calculated that if the dollar appreciated by 0.1 dinar, subsidies would increase by 4 million dinars (interview at the Direction de la concurrence, Ministère du Commerce tunisien, November 1998).

12. This section is drawn from Chemingui and Dessus (1999), who give the sectoral results of the simulations presented here.

13. This effect could be increased by the expected rise in world prices of food products under the GATT (Goldin, Knudsen and van der Mensbrugghe, 1993), which is not taken into account here.

14. Tunisian exports in 1995 were 2.7 per cent of EU imports from the rest of the world. Tunisia imported 3.5 per cent of the EU's exports to the rest of the world in 1995.

15. Olive oil exports increase much more quickly than total olive oil production, which increases by only 17 per cent in 2010 compared to the reference situation (because of the constraint on land suitable for tree crops). Exports replace the output intended for the domestic market, and therefore the volume of imports of groundnut and sunflower seed oil from Europe increase by a factor of 3.5 to satisfy domestic demand.

16. This counterpart could be also discussed in the WTO during the forthcoming round of multilateral negotiations. However, it is too early to make assumptions about the nature and content of such discussions. Although agriculture will probably be a central issue, the general form of these discussions has not been decided (Konandreas, 1998).

17. This chapter does not take into account the social costs of labour reallocation and job losses, but Chapter 4 may provide some indication of their nature.

Chapter 4

Will the Association Agreement Promote Growth and Employment in Egypt?

Egypt may be considered to have successfully completed the stabilisation programme it undertook in the early 1990s (Subramanian, 1997). A public deficit of almost 20 per cent of GDP in 1991 is almost non-existent today. Inflation was also nearly 20 per cent in 1991, but had fallen below 5 per cent by 1998. The current account of the balance of payments is now approaching equilibrium, and outstanding external debt represents less than 40 per cent of national income (ECES, 1999). In fact, owing to the recovery of macroeconomic stability, Egypt seems to have withstood the 1997-98 Asian crisis better than other emerging countries (ERF, 1998).

Stabilisation of the Egyptian economy, however necessary it was, had a heavy cost. Although the growth rate has been increasing regularly since 1990, average growth has remained low at about 4 per cent. This performance is considered insufficient to absorb the growing number of new labour market entrants or significantly raise the standard of living of Egyptian households, and it seems to have been accompanied by an appreciable fall in the job content of growth (Fergany, 1998*a*). Although precise figures are unavailable, it is highly probable that these two factors tended to increase unemployment and poverty in recent years (Radwan, 1998).

Egypt must therefore accelerate the pace of its reform programme to compensate for these structural problems, without compromising macroeconomic stability. This programme has many facets, but on the whole it aims at supporting growth and employment by liberalising the economy and encouraging the rise of a diversified private sector (Ministry for the Economy, 1997).

Egypt seems to need to diversify its export industry to win new markets. Oil exports, tourism, the Suez Canal and the repatriation of income by workers abroad, which still financed half of all imports in 1995, currently offer only limited possibilities of foreign exchange revenue (World Bank, 1997*a*). Multilateral trade liberalisation under the GATT and new regional initiatives have a tendency to erode preferences for Egyptian exports, especially on the European market, its leading customer (Hoekman and Subramanian, 1997). To avoid the risk of a major balance-of-payments crisis,

Egypt must find new sources of exports to continue satisfying its increasing demand for imported goods. This is one of the stated priorities of the Egyptian government, which set a national objective of multiplying exports of manufactured goods three-fold between 1995 and 2000. This may affect macroeconomic stability, of course, but it is probably at least as important for the country's growth and future development. The development strategy based on exports of fossil resources actually acted as a brake on international trade (Petri, 1997*b*), and has also largely isolated Egypt from the globalisation process and its growth potential. In contrast, the promotion of manufactured exports, the heart of the diversification strategy, creates dynamism, not only because international demand for such products grows more rapidly, but also because this approach is more likely to increase factor productivity (Sachs and Warner, 1995; Radelet, 1999). Several channels of transmission are generally mentioned: exposure of local entrepreneurs to greater competition, less risk of the Dutch disease and an acceleration of technology transfers.

It is also hoped that this strategy will bear fruit in terms of job creation by encouraging the development of labour-intensive industries and creating new opportunities for skilled workers, a significant proportion of whom remain underemployed (Pissarides, 1993). It is uncertain, however, that an export-promotion strategy will be sufficient. Several concerns have been expressed to this effect. One view holds that opening up to imports, which is necessary for the development of a competitive manufacturing sector, leads to net job destruction if labour markets lack sufficient allocative efficiency. This concern is justified because the Egyptian labour market is quite segmented and governed by regulations and practices which restrict the mobility — and even the use — of available human resources. Women, for example, are discriminated against in many sectors, and remain to a large extent underemployed (Assaad, 1997). The second concern is that Egypt's capital-intensive export industry, which creates few jobs, will develop still further if the cost of imported capital decreases after liberalisation, and if this incentive to substitute capital for labour is not compensated by increased access to export markets where Egypt would have a comparative advantage, and which would be rather labour-intensive, such as agriculture.

There are opposing arguments which call for openness in order to promote job creation. One, based on the concepts of political economy, holds that trade liberalisation *per se* could facilitate institutional reform of labour markets by reducing the loss sustained by those who would suffer the most from this reform, and would thus be the most likely to oppose it. Another case for liberalisation challenges the traditional axiom of international trade theory which predicts an increase in employment and relative remuneration of the abundant factor, i.e. unskilled labour in developing countries, as the economy becomes integrated in the international division of labour. However, recent experience with liberalisation in middle-income countries tends rather to prove the opposite (Robbins, 1996), which would be a good news for the small group of skilled workers, which has the highest rate of unemployment but is also strongly opposed to reform. It would also be good news for Egypt, which would see its past efforts in education rewarded (Birsdsall and O'Connell, 1999) and would be encouraged to continue them.

Under these conditions, how and to what extent can the association agreement between Egypt and the European Union serve as a catalyst to facilitate economic diversification and encourage massive job creation? Will it be sufficient to enable Egypt to deal with the challenges it will face in the years to come?

To seek answers to these questions, this chapter begins by analysing the medium-term consequences of the association agreement in a dynamic framework. This first part explores the growth potential deriving from various forms of association with the EU and various regional strategies. The second part is more specifically devoted to identifying complementary labour market policies and the potential for job creation stemming from the Euro-Mediterranean agreement. To this end, the model used in the second part differs from that used in the first, in order to have an analytical tool better suited to the question at hand. The second model gives more importance to a description of the labour market and its potential for change in the medium term, while the first makes it possible to examine longer-term conditions which would lead to a transition from a rent-seeking economy to one whose dynamism would be based on international trade.

Egypt's International Trade

A Trade Structure Typical of a Rent-seeking Economy

Egypt's economy appears to be open to international trade, with exports and imports representing 22 per cent and 26 per cent of GDP respectively in 1995. Observation of the trade structure qualifies this picture, however. The principal export earnings come from services, in particular from the Suez Canal and tourism, and from oil and textiles, which accounted for 18, 16, 16 and 8 per cent respectively of total export earnings in 1995 (World Bank, 1997*a*). Goods accounted for only 37 per cent of total exports in the same year. The most recent estimates do not seem to indicate a change in this trend (ECES, 1999).

This export structure is cause for concern about growth in the long term, because it largely depends on resources which are essentially exogenous, random and risky[1]. The Suez Canal's traffic cannot increase indefinitely and the long-term oil supply depends on reserves. Forecasts on the subject are rather pessimistic, and unless new reserves are discovered, the oil rent will decrease significantly, while income from the Suez Canal will stagnate at best (World Bank, 1997*a*). Moreover, these sectors have few links with the rest of the economy. Their production processes do not consume many other products and generate only a small number of wage incomes. Finally, exports of goods are much too low relative to total imports, the trade deficit being financed by transfers of foreign saving. Remittances from workers abroad represented two-thirds of export earnings from goods in 1995, or 3.3 billion euros. Official development assistance covers the rest of the deficit. This structure of financing actually tends to strengthen Egypt's dependence on natural resources, because Egyptians abroad for the most part work in the Gulf countries and consequently have incomes indexed

to the price of oil. In the capital account, the small flows of foreign direct investment are also concentrated in oil extraction and refining, which adds to the dependence on natural resources.

These characteristics, typical of a rent-seeking economy, are of course found at all levels of the economy. Table 4.1 shows the dominant share of non-tradeable goods in the Egyptian economy and the marginal share of light industry, which are classic symptoms of the Dutch disease. This is explained by Egypt's large inflows of rents from different sources since the 1970s, which led to growth in the share of activities involving non-tradeable goods relative to the share of those competing with the rest of the world. If Egypt is to become progressively integrated in the international division of labour, it must develop a system of incentives encouraging factors to shift to tradeable goods sectors, which the real exchange rate of the past two decades has not encouraged[2]. A simple simulation can illustrate this. It is performed with a dynamic model which we will use and describe in greater detail below. We now compare two scenarios: the first is the reference scenario, in which oil reserves are depleted by 1 per cent a year between 1995 and 2010, while in the alternative scenario oil reserves remain constant throughout the same period. Through a wealth effect due to this new windfall, real GDP is 0.8 per cent higher in 2010 in the alternative scenario than in the reference scenario. Exports and imports in volume are lower, however, with relative variations of -0.8 per cent each. Consequently, the observed degree of openness, measured by the ratio of the sum of exports and imports to GDP, is lower in 2010 in the alternative scenario than in the reference scenario. The real exchange rate, measured by the price of value added, appreciates by 1.2 per cent. In other words, the Egyptian economy's dependence on its natural resources structurally tends to isolate it from external markets. Even without a retrospective analysis, it seems likely that this dependence is a major cause of the decrease in openness observed since 1980 (Table 2.4).

Table 4.1. **Sectoral Breakdown of Supply and Demand in 1995**
(percentages)

	Value added	Wage bill	Interm. consump.	Private consump.	Public consump	GFCF	Imports	Exports
Primary products	25.5	17.7	10.2	26.2	4.5	8.8	13.1	3.9
Agri-food	6.3	3.6	13.5	19.1	4.1	0.0	9.0	0.9
Textiles	3.3	5.1	11.9	8.7	3.3	0.0	2.6	10.5
Oil products	9.4	4.4	15.4	8.2	4.0	0.0	8.2	15.4
Capital goods	11.3	13.0	20.7	7.5	5.4	55.0	28.6	5.4
Other manuf. products	2.8	2.0	4.1	4.7	3.8	1.6	9.4	0.8
Export services	22.5	12.8	13.2	12.8	10.2	11.9	7.6	53.0
Other services	18.9	41.3	11.0	12.8	64.7	22.6	21.5	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Value (billion £E)	193.1	55.5	156.9	150.2	21.9	42.3	54.0	44.6

Source: CAPMAS (1997).

Notes: Exports and imports are in world prices. Interm. consump.: intermediate consumption; GFCF: gross fixed capital formation. (£E = Egyptian pound.)

The other features of Egyptian foreign trade are more characteristic of a low-income country: Egypt is a net importer of capital goods despite an import-substitution policy maintained until the late 1980s; it is also a net importer of agricultural and agri-food products.

This structure of foreign trade is of course largely a legacy of Egypt's natural resource endowment, on which its oil and agricultural industries depend. It is also a result of trade policy, whose main features are described next.

Trade and Protection: a Geographical Perspective

The European Union is Egypt's main trading partner, accounting for 46 per cent of its exports and 39 per cent of its imports. The NAFTA countries account for less than 20 per cent of Egyptian imports and exports. The eleven other South Mediterranean countries (MED) participating in the Barcelona initiative import 14 per cent of Egyptian exports, while Egypt imports almost nothing from this area (Dessus and Suwa-Eisenmann, 1998).

Exports to the European Union are more diversified than exports to the NAFTA countries: textiles represent a significant share of the former, equalling oil exports in importance. Egypt also exports agricultural products and capital goods to the European Union. Exports of textile products are concentrated on the EU and NAFTA markets, probably because of the preferences granted to them under the Multi-Fibre Agreement (Kheir-El-Din and El-Sayed, 1997). The geographical distribution of imports is diversified. Thirty-eight per cent of all imports from NAFTA (7 per cent of total imports) are US agricultural products. Agri-food products are primarily imported from the rest of the world. The European Union and the rest of the world seem to be in competition in the largest Egyptian import market, namely capital goods, which constitute one-third of total imports. Thus the first consequence of signing an association agreement with the European Union could be a drop in the price of capital goods on the Egyptian market. As for the price of final consumer goods, the automatic effect of the tariff reductions on imports from NAFTA would probably be larger.

Nominal protection differs appreciably from one region and group of products to another (Table 4.2). The average tariff weighted by the value of imports is 13 per cent, including imports of services, for which customs duties are supposed to be zero[3]. Apart from alcoholic beverages, whose high level of protection reflects religious preferences, the most protected industries in Egypt are shoes, other textiles and furniture. Imported intermediate inputs and capital goods are not spared by this system of protection. Transportation equipment is taxed up to 60 per cent, building materials up to 27 per cent and machine tools up to 22 per cent (Table 2.9).

A comparison of average tariffs by regions reveals the differences in the products imported from different regions. From the NAFTA countries, Egypt mainly imports agricultural products, taxed only slightly relative to the average. Consequently, the

average tariff of about 7 per cent on imports from NAFTA is below the average (13 per cent). On the other hand, the average tariff on imports from Mediterranean partner countries and the rest of the world is above the average, around 16 per cent.

Table 4.2. **Weighted Averages of Nominal Protection in 1995**
(percentages)

	EU	NAFTA	MED	ROW	Total
Primary products	6.8	1.9	19.6	8.0	4.6
Agri-food	11.3	6.7	15.2	9.9	10.0
Textiles	27.8	12.8	21.9	38.7	30.6
Oil products	12.6	13.0	12.4	11.7	12.4
Capital goods	23.5	31.5	24.8	33.3	28.6
Other manuf. products	14.4	13.5	40.9	17.3	15.9
Export services	0.0	0.0	0.0	0.0	0.0
Other services	0.0	0.0	0.0	0.0	0.0
Average tariff	12.4	7.4	16.2	16.1	13.0
Proportion tariff revenue	37.2	11.2	3.1	48.6	100.0

Source: UNCTAD (1998).

Note: Nominal protection is weighted by the value of imports.

As we pointed out in the preceding chapters, the chief result of an association agreement, in its current form, is tariff dismantling for industrial products from the European Union. It can be expected that this will lead to an increase in imports of capital goods and, at the same time, trade creation and trade diversion. These effects, which were highlighted by the static analysis of regional integration, can in turn have an impact on the growth of the Egyptian economy via two channels: an increase in the rate of accumulation due to a higher return on capital; and the possibility of an increase in technology transfers, and thus of capital and labour productivity, if it is assumed that more intense trade with developed countries can be the source of external economies.

Other induced effects can also be expected from an association agreement: greater inflows of foreign saving; and greater security in transactions, which could facilitate the access of Egyptian exports to the European market. These effects and their impact on growth are estimated below.

The Growth Potential of Regional Integration with the European Union

As in the analysis of Tunisia, we first define a reference scenario to the year 2010. This first scenario describes the economy's development in the absence of new reforms. It is based on the macroeconomic projections of the World Bank (1998*a*) and the Egyptian government (Ministry for the Economy, 1997). The goal is to create a counterfactual scenario which will be compared with scenarios of alternative policies, and in particular with the impact of the association agreement. This should not be regarded as a macroeconomic forecasting exercise. Under given macroeconomic conditions, however, the model used here is an appropriate instrument for observing factor reallocation in an environment in which agents' incentives change over time.

In addition to its dynamic character, the version of the model used in this section differs from that used in the static analysis of Chapter 2 in several respects, which are detailed in the Appendix to this volume. While the model still includes one representative household and one type of labour, it now has four trade partners and three types of capital stock — the physical capital stock, which is the discounted sum (at a 4 per cent depreciation rate) of past investments; the stock of oil and gas reserves; and the fixed factor represented by the Suez Canal — whereas the previous model had only one. Each of the last two types of capital stock provides the government with a rent, which is measured by the difference between income and operating costs. These stocks change exogenously, in contrast to the physical capital stock which depends on the investment rate, itself determined by household saving decisions. Natural resource reserves and the Suez Canal are "fixed": they cannot be used for any economic activity other than extraction and maritime transport. This is not true of physical capital, which can be reallocated from one sector to another, depending on the opportunities for a return. However, reallocation is more expensive for installed capital than for new capital, i.e. current investment. It is these differences in the reallocative capacity of capital and its substitutability with other factors (labour, energy, intermediate inputs and fixed factors) which allow us to calibrate the dynamic capital generation model that we use here.

The main assumptions used to build the reference scenario, *REF*, are detailed in the Appendix. This scenario is compared with the scenarios of alternative policies tested below, which describe various regional integration strategies.

Dynamic Simulations of the Association Agreements

The first simulation, *EU1*, simulates tariff dismantling for European industrial products only, as described in Table 2.9. This simulation differs from *S1* in Chapter 2 only in that the analysis is now conducted in a dynamic framework. The second simulation, *EU2*, combines tariff dismantling by Egypt and a financial contribution which the European Union could provide under this new form of association. We make an *ad hoc* assumption that this contribution will take the form of an increase in official assistance of £E1 billion each year from 1998 to 2010. In 1995, the net sum of official development assistance (multilateral and bilateral) from the European Union countries to Egypt represented £E2.8 billion (OECD, 1997*a*). The total amount of assistance to the Mediterranean countries under the 1995-99 MEDA programme, the financial arm of the Barcelona initiative, is about £E7.4 billion (1995 Egyptian pounds) per annum, if funds credited by the European Investment Bank are taken into account. These funds are not broken down by recipient country. If Egypt were again to receive a share similar to that which it received in 1995 (about 40 per cent of the bilateral and multilateral assistance given to the Mediterranean partner countries), the new amount of annual assistance would be £E2.9 billion, or the equivalent of what it currently receives. It is likely, however, that the amount will be larger, because an appreciable increase in MEDA funds for Egypt could encourage it to begin the process of association,

despite the reluctance it has displayed on several occasions. In this respect, Egypt is certainly considered a priority by the EU, because by signing a new agreement with it, the European Union automatically incorporates more than half the population of the Arab Mediterranean partner countries (Table 2.1) into its Mediterranean strategy. This would give the Barcelona process increased credibility and provide a new incentive for the last Mediterranean partner countries to accept this strategy.

A third simulation, *EU3*, combines the features of the second simulation with what could be expected from "deep integration", as described in Chapter 1. We recall that this type of integration, which in particular involves harmonisation of standards and mutual recognition of the regulations in force in each country participating in the process, should in theory permit greater market contestability and desegmentation of markets (Hoekman and Konan, 1999). Quantitative measurement of such reforms is very difficult, however, because we know little about the real importance of this type of non-tariff barrier. Previous studies[4] have tried to evaluate the impact of harmonisation of rules under a Euro-Mediterranean agreement by representing it, in practice, by greater access of each partner's exports to the domestic market of the other partner. We simply follow the procedure used in these studies, simulating deep integration through a 2 per cent increase in the price of Egyptian manufactured exports on the European market and its corresponding measure, a 2 per cent reduction in the international price of European manufactured goods on the Egyptian market.

This simulation can also be understood as simulating a reduction of uncertainty and of the volatility of export prices faced by Egyptian exporters on the European market, owing to the possibility that anti-dumping procedures could be used against them, as was the case in the recent past. These procedures actually serve as effective non-tariff protection (Springael and Vandenbussche, 1999). It can be assumed that mutual recognition of rules under the Euro-Mediterranean agreements would reduce this risk. More generally, simulation *EU3* can be interpreted as describing the explicit attempts of governments on both shores of the Mediterranean to reduce, through improved co-ordination and co-operation, the effect of market segmentation due to national regulatory policies of all types (Hoekman and Konan, 1999).

Table 4.3 gives the macroeconomic results of these simulations. In the absence of any structural reforms (scenario *REF*), Egypt does not seem able to initiate a process of rapid integration into the world market. Despite our assumption of rapid growth (5.8 per cent annual growth from 1995 to 2010) and major incentives to shift to more buoyant export markets (to offset the stagnation of Egypt's natural resources), Egyptian exports increase only slightly, while the volume of imports decreases relative to GDP. Consequently, the degree of openness increases moderately between 1995 and 2010, from 48 per cent to 53 per cent. This increase in exports, to finance the same proportion of imports in GDP, is obtained mainly through a major depreciation of the real exchange rate, by approximately 10 per cent over 15 years. Thus openness actually tends to decrease in terms of purchasing power parity. In other words, to compensate for the loss of export earnings from exploitation of its natural resources, Egypt wins market share by strictly limiting the rise of real wages.

Table 4.3. **Macroeconomic Results of the Scenarios, 1995-2010**
(percentages)

	REF	*EU1*	*EU2*	*EU3*	*EU3X*	*EU3K1*	*EU3K2*
Real GDP	5.8	5.9	5.9	6.0	6.4	6.6	6.8
Private consumption	5.4	5.4	5.5	5.5	6.0	6.1	6.4
Investment	6.5	6.7	6.8	6.9	7.3	8.0	8.3
Exports	6.3	7.0	7.0	7.1	7.6	7.9	7.6
Imports	5.5	6.1	6.2	6.4	6.8	7.1	7.4
Stock of physical capital	5.8	5.8	5.9	6.0	6.1	6.4	6.5
Return on capital	15.1	15.0	14.9	15.0	15.7	15.5	15.6
Factor productivity	1.1	1.1	1.1	1.1	1.5	1.5	1.5
Variation of well-being		0.0	1.2	1.7	9.2	12.6	15.4

Notes: The figures shown are average annual growth rates from 1995 to 2010, with the exception of the annual rate of return on capital and the variation of well-being; the latter is measured by the Hicks equivalent in 2010 (taking into account the variation in disposable income), deflated by the disposable income of the representative household in the reference scenario in 2010. *REF*: reference scenario; *EU1*: progressive dismantling of tariffs on European industrial products; *EU2*: *EU1* + financial transfers by the *EU*; *EU3*: *EU2* + improved terms of trade *vis-à-vis* the *EU*; *EU3X*: *EU3* with externalities taken into account; *EU3K1*: *EU3X* with rise in the household saving rate; *EU3K2*: *EU3X* with rise in foreign direct investment.

The sectors which depended on the availability of exogenous resources in 1995 have a considerably reduced share of GDP in 2010. A comparison of the 1995 and 2010 export structures reveals that the export textile industry is the main beneficiary of this compulsory diversification, followed by capital goods and primary industries. It seems, however, that natural resource depletion and strong growth are not enough to create a new growth dynamic based on international trade and integration in the world market. The gains in competitiveness are mainly due to real depreciation, as no significant gains seem to be generated by the factor reallocation brought about by compulsory diversification.

In scenario *EU1*, however, simple tariff dismantling does lead to significant gains in competitiveness due to factor reallocation and decreased input costs: this time the volume of exports grows much faster than GDP (6.7 per cent as against 4.9 per cent), with a depreciation of the real exchange rate similar to that observed in scenario *REF*. The export and import volumes are 9.8 per cent and 9.1 per cent higher respectively in scenario *EU1* than in *REF*. Thus there is trade creation. However, this result is only half of that obtained using the static model (Table 2.10). This comparison highlights the importance of allocative efficiency in determining the result: the factors of production (physical capital and natural resources here, labour in the next section) are not completely mobile from one sector to another, which tends to limit the gains from reallocation.

The gain in well-being is marginal compared to the reference scenario. On the one hand, households have access to more diversified supply and obtain the same level of utility at lower cost. On the other, their disposable income tends to decrease: the factor endowment of households (especially in capital) increases slightly — owing to the lower price of foreign capital goods, which enables them to import more of these goods (Table 4.5) — and wages stagnate. Furthermore, there is a sharp increase

in direct taxes to compensate for the loss of tariff revenue, about 50 per cent in 2010 compared to the reference scenario. Consequently, the fall in disposable income almost entirely offsets the fact that the households can obtain the same utility at lower cost.

Table 4.5. **Structure of Imports in 2010 in the Scenarios**
(percentages)

	REF	*EU1*	*EU2*	*EU3*	*EU3X*	*EU3K1*	*EU3K2*
Primary products	10.1	9.2	9.2	9.1	9.0	8.8	8.8
Agri-food	7.4	6.8	6.7	6.7	6.7	6.5	6.5
Textiles	2.2	2.5	2.5	2.5	2.5	2.5	2.5
Oil products	15.4	16.5	16.5	16.7	16.9	16.7	16.7
Capital goods	27.1	30.0	30.1	30.3	30.0	30.9	31.0
Other manuf. products	9.3	9.1	9.1	9.1	9.0	9.0	8.8
Export services	8.5	7.7	7.8	7.7	7.8	7.8	7.9
Other services	20.0	18.2	18.2	18.0	18.0	17.8	17.7

In simulation *EU2*, the increase in the capital stock resulting from a rise in foreign saving does allow households to increase their capital endowments, and consequently their disposable incomes. This flow of new investments also results in faster redeployment of capital to sectors offering a new comparative advantage. The gain in well-being then becomes positive and is equivalent to a 1.2 per cent increase in the disposable income of households. This measure has little impact on trade flows, which increase at rates close to those observed in simulation *EU1*. Imports increase just a little faster than previously, because of the relaxation of the external constraint imposed by the way *EU1* was constructed. This measure also does not seem to have a significant impact on the structure of trade. Its main advantage seems to lie in enabling households to support the costs of the transition more easily. In simulation *EU1*, households experience a loss of well-being in the first years and then realise a slight gain, whereas in simulation *EU2* the gains in well-being are positive from the first year. The political feasibility of reform is likely to be higher in this second case.

Scenario *EU3* simulates "deep integration", which tends to facilitate access of Egyptian industrial products to the European market. Paradoxically, this measure tends to increase Egyptian imports from Europe more than Egyptian exports to Europe. This is largely due to the bilateral trade structure of Egypt and the EU: Egypt imports more industrial products from Europe than it exports. However, these new imports tend to encourage investment, which becomes less expensive, and thus facilitate the restructuring of export industry. Exports in 2010 increase from 34 per cent to 37 per cent of manufactured goods. Increased access to imported capital goods, financed by inflows of saving from the European Union, tends to jog the long-term growth path of the Egyptian economy slightly: growth of GDP and of the physical capital stock gain 0.2 point each year compared to reference scenario. The gains in well-being, however, remain very small: +1.7 per cent in simulation *EU3*, compared to the reference scenario in 2010. Moreover, even this gain does not appear until 12 years have passed; the gains of the earlier years, although positive, are lower[5].

This dynamic analysis of the Euro-Mediterranean agreement for Egypt highlights several features that were invisible in the static analysis of Chapter 2. First, because of the existence of fixed, or already installed, factors, the capacity for factor reallocation is probably overestimated in the static analysis. Second, the decreased cost of investment resulting from tariff dismantling is not likely to generate a significant increase in the rate of accumulation or growth. Third, analysis of the regional integration process over time shows that Egypt would have difficulty in bearing the costs of the first years of transition without financial assistance from the European Union.

These features combine to make this agreement rather unattractive, since it does not seem to bring any significant improvement in the standard of living of Egyptian households. The agreement could look different, however, if it were accompanied by significant technology transfers and/or new domestic or foreign investments after trade liberalisation. As the empirical literature seems to credit the possibility of such effects, we now try to analyse their relevance for Egypt, and the ways in which they could modify the long-term impact of a Euro-Mediterranean agreement.

Liberalisation, Technical Progress and Investment

It is widely accepted today that trade liberalisation is a potential factor for increased productivity and investment.

The productivity aspect has been the subject of much empirical work, and the positive link between trade liberalisation policies and factor productivity is now well documented (Edwards, 1998). The nature of the relationship remains controversial, however, with those who advocate import-led productivity growth (Esfahani, 1991; Dessus, 1999) opposing those who would rather accord a preponderant role to exports to promote productivity gains in general (World Bank, 1997*b*) and in Egypt in particular (Handoussa *et al.*, 1986). Despite these controversies, a consensus seems to have developed around the idea that the success of liberalisation policies cannot be demonstrated without taking into account the potential existence of associated dynamic productivity gains. These gains can stem from the fact that liberalisation encourages producers to show greater technical efficiency to meet foreign competition; they can also arise from increased access to foreign technology and more diversified inputs.

We now try to measure the relevance of these effects in Egypt using a simple econometric analysis, which consists in estimating an aggregated Cobb-Douglas production function with constant returns and observing whether trade flows have an influence on total factor productivity (TFP). In practice, we estimate the following model for the 1966-96 period:

$$\ln(Y_t/L_t) = A + \alpha\ln(K_t/L_t) + \ln O_t + u_t \qquad (4.1)$$

where Y is the volume of GDP at 1987 prices, L the labour force, K the physical capital stock at the beginning of the period and O an indicator of trade flows[6]. A preliminary test using the logarithm of each series, expressed as a level per capita, shows that each of them is integrated of order one. A linear combination of these series may thus express a long-term relationship if they are cointegrated.

Table 4.6 shows the main results of the econometric analysis. The first trade variable tested is the logarithm of exports of goods, *X*. This variable affects per capita GDP positively and significantly, and the relationship is cointegrated. It also satisfies a Hausman endogeneity test. However, it does not satisfy a test of constant returns to scale: when this constraint is relaxed, returns to scale grow considerably and the export variable loses its significance. This finding makes the estimated impact of exports on total factor productivity hardly credible, especially since exports of manufactured goods (a subset of exported goods), *Xmnf*, have a negative impact on TFP, as can be seen in the second column of Table 4.6. This result supports the doubts expressed in many studies about the existence of a direct causality link between exports and productivity (Clerides *et al*., 1998). It does not deny the utility of an export-promotion policy, but tends to specify the channel through which exports can support growth. As will be seen in the next paragraph, if imports of manufactured goods encourage productivity gains, then it is advisable to promote exports of dynamic products to finance such imports. This can even set a virtuous circle in motion if the productivity gains have a positive impact on the competitiveness of the export sector.

Table 4.6. **Econometric Analysis of the External Effects of Opening, 1966-96**

	(1)	*(2)*	*(3)*	*(4)*
Constant	2.291 (7.3)	3.021 (11)	2.336 (15)	2.419 (19)
ln (K/L)	0.545 (34)	0.564 (33)	0.496 (29)	0.487 (31)
ln (X)	0.038 (2.4)			
ln (Xmnf)		-0.003 (0.8)		
ln (M)			0.053 (5.1)	
ln(Mmnf)				0.054 (6.1)
Adjusted R^2	0.982	0.978	0.989	0.990
D-W	0.706	0.467	1.260	1.338
?	0.005	0.153	0.002	0.001
F	0.005	0.000	0.289	0.561
$?^2$	0.637	0.435	0.991	0.994

Source: World Bank (1998*b*).

Notes: Dependent variable: *ln(Y/L)*; *Y*: real GDP at 1987 prices; *K*: stock of physical capital at the beginning of the period; *L*: working population; *X*: merchandise exports; *Xmnf*: exports of manufactured products; *M*: merchandise imports; *Mmnf*: imports of manufactured products.
The variables between parentheses are the t statistics. ?: probability of wrongly rejecting the null hypothesis that the estimated residual has a unit root; *F*: probability of wrongly rejecting the null hypothesis of constant returns to *K* and *L*; $?^2$: probability of wrongly rejecting the null hypothesis that independent variables are exogenous. Hausman's exogeneity test was performed with the following instruments: logarithm of international price of crude oil, logarithm of real US GDP at 1987 prices, linear trend.

Imports of goods, *M*, and more specifically of manufactured goods, *Mmnf*, seem to have a positive effect on factor productivity. The hypothesis of constant returns cannot be rejected in these last two equations. The two import variables can therefore be regarded as factors of productivity. The introduction of these variables does not lead to a simultaneity bias. The Hausman tests indicate that the results are very similar when the last two equations are estimated with instrumental variables, in order to take into account the possible endogeneity of the capital stock and imports. Lastly, these two relationships can be interpreted as long-term relationships because of the stationarity of the estimated residues.

We introduce this effect in our general equilibrium analysis. Little attention seems to have been paid to measuring this type of phenomenon in general equilibrium analysis of trade policies, except in the work of de Melo and Robinson (1992). These authors show, however, that if such phenomena are not taken into account, the observed structural changes[7] after trade liberalisation cannot be explained by traditional neo-classical modelling, in which technical progress is exogenous. Following de Melo and Robinson (1992), we introduce an externality driven by imports of manufactured goods into the general equilibrium model. This externality takes the following form:

$$Y_t = f(A_t(K, L), X) \qquad \text{et} \qquad A_t = (1+g)A_{t-1}\left[\sum_{mnf} M_t / \sum_{mnf} M_{t-1}\right]^{0.05} \qquad (4.2)$$

where Y is value added, K the physical capital stock, L labour, X exogenous resources (gas and oil reserves, the Suez Canal), A the level of total factor productivity, g the growth rate of exogenous technical progress, M_t the volume of imports in period t and *mnf* the index of manufactured goods. This equation therefore expresses the fact that the level of TFP is an increasing function of manufactured goods imports. A 1 per cent increase in the latter leads to an increase of 0.05 per cent in productivity, as suggested by our econometric results. This phenomenon is modelled as an externality, since we do not change the first order conditions in our model: individual producers do not perceive an interest in importing more than what the market dictates. They do not internalise the presence of this externality in their economic calculus.

This change in the model modifies the picture one gets of the marginal impact of the trade policy. The reference scenario remains unchanged, since the economy's growth rate is fixed. The only modification is in the growth rate of exogenous technical progress g, which tends to decrease compared to the preceding reference scenario, since imports of manufactured goods grow naturally between 1995 and 2010. This rate falls to an average of only 0.4 per cent a year, against 1.1 per cent previously. In other words, we now make the assumption that 0.7 percentage points (1.1 less 0.4) of annual TFP growth are due to the increasing availability of imported manufactured goods in the economy.

The introduction of this externality clearly magnifies the impact of an association agreement in terms of growth and well-being. When an association agreement is simulated as described in *EU3*, but this time taking into account the existence of potential external economies in the Egyptian economy (simulation *EU3X*), the resulting gains in well-being correspond to a 9.2 per cent increase in disposable household income in 2010 (Table 4.3). The Egyptian economy's long-term growth path between 1995 and 2010 changes from 5.8 per cent per annum in the reference scenario to an annual average of 6.4 per cent. Having become more competitive, the Egyptian economy devotes a greater share of its resources to international trade and to labour- and capital-intensive activities (as opposed to activities intensive in natural resources). Industrial diversification is encouraged. The increase in household income, with an unchanged saving rate, also encourages the accumulation of physical capital, whose average annual growth increases by 0.3 percentage points relative to the reference scenario.

If the association agreement encourages imports of manufactured goods, it can thus have a significant impact on the Egyptian economy's growth by accelerating productivity gains. In our simulations, the annual growth of total factor productivity increases from 1.1 per cent to 1.5 per cent owing to the association agreement.

Another growth effect which can be expected from this agreement is an increase in investment. This aspect has been the subject of many studies but, once again, has been generally neglected in general equilibrium analyses of trade policies. An attempt to estimate the impact of liberalisation on the accumulation rate using a general equilibrium analysis was made by Rutherford and Tarr (1997). It assumes that the available capital stock of each country is optimal and chosen only for its return. Consequently, if the return on capital increases after liberalisation, agents will be encouraged to invest until the marginal productivity of capital returns to its level prior to the reform. This hypothesis is not very credible in this form, since it implicitly assumes that agents (households, enterprises, government, foreign investors) have unhindered access to any desired borrowing, or can increase their saving rate similarly. However, agents in such a situation may actually choose to make up only part of the shortfall in capital stock so as not to reduce present consumption too much, or may be constrained to do so if their demand for credit is not met. This approach nonetheless has the merit of pointing out that the association agreement, if it raises the return on physical capital, may increase the potential for new investment. We seek to measure this potential, bearing in mind that our earlier simulations suggest that if the association agreement is accompanied by positive externalities, it can significantly increase the return on physical capital.

We estimate an equation that describes fixed capital formation in Egypt since 1967, using a model in which capital growth adjusts to its long-term target, which itself depends on the observed capital yield — following Rutherford and Tarr (1997) in this respect — and on the national saving rate. The latter variable represents the external financing constraint faced by the majority of developing countries (Dessus and Herrera, 1999). This equation is written (where K_t is the capital stock at the beginning of the period):

$$\ln(K_{t+1} / K_t) = c + (1-\lambda)\ln(K_t / K_{t-1}) + \gamma \ln r_{t-1} + \eta \ln s_t + u_t \qquad (4.3)$$

This equation is estimated from 1967 to 1996. The return on physical capital, *r*, is measured by the estimated marginal productivity of physical capital, which is represented by $\gamma Y/K$ following equation (4.1). The national saving rate, *s*, is obtained from the World Bank (1998*b*). The results are presented in Table 4.7. The various estimates presented show that the observed returns have a significant and positive impact on the growth of physical capital. The latter, which can be interpreted as an investment rate, also depends on the national saving rate, which represents the external constraint on financing. It can be assumed that this constraint was relaxed at the time of the oil shocks of the 1970s, and this hypothesis seems to be confirmed by the introduction of the variable for the international price of oil, which affects fixed

capital formation positively and significantly. Finally, a fourth equation introduces the lagged endogenous variable, to take into account the time needed for adjustment. It does not modify the estimation of the long-term elasticity of capital formation with respect to the observed return, γ, which settles at around 0.2.

Table 4.7. **Econometric Analysis of Fixed Capital Formation, 1967-96**

	(1)	*(2)*	*(3)*	*(4)*
Constant	0.223 (4.7)	0.090 (2.3)	0.166 (6.3)	0.118 (3.5)
ln r_{-1}	0.097 (3.3)	0.155 (7.0)	0.197 (13)	0.128 (3.3)
ln *s*		0.089 (5.9)	0.043 (3.8)	0.021 (1.7)
ln *p*			0.027 (6.9)	0.019 (3.6)
ln(K/K_{-1})				0.384 (2.1)
Adjusted R^2	0.250	0.661	0.875	0.900
D-W	0.203	0.644	1.182	1.952

Notes: Dependent variable: $ln(K_{+1}/K)$; r_{-1}: observed rate of return on stock of capital (i.e. a multiple of Y_{-1}/K_{-2}); *s*: domestic rate of saving; *p*: international price of crude oil. The variables between parentheses are the t statistics. All variables are stationary. The variable for the return on capital satisfies the exogeneity test. The value of $?^2$ associated with this test is 0.49. For five degrees of freedom, the probability of wrongly rejecting the null hypothesis of exogeneity exceeds 99 per cent. This instrument used for this test was the logarithm of the US GDP.

We therefore carry out two new simulations (*EU3K1* and *EU3K2*) which add this accumulation effect to the effects of the preceding simulation. Both of these simulations identify the increase in the accumulation rate which would be compatible with the observed return after the reform; they differ in the assumptions used concerning the way new investments are financed. In theory, for each financing method there should be a unique solution, which defines the new long-term equilibrium. According to our estimates, this solution indicates that the increase in the capital growth rate after the reform is 0.2 times the observed return. If the rate of accumulation is too high (low), then it tends to reduce (increase) the return on capital and thus becomes incompatible with our earlier results showing a rise in the return on capital after the reform.

In view of the substantial government expenditure which will be necessary during the transitional period and which will undoubtedly leave few resources for any increase in public saving, these new investments can be financed in two ways: an increase in the household saving rate, and an increase in foreign direct investment. In the first case (*EU3K1*), the new long-term equilibrium corresponds to a 6.4 per cent rate of accumulation, for a 14.1 to 14.5 per cent increase in observed return in 2010 compared to the reference scenario. This increase in the physical capital stock is financed by a gradual increase in the household saving rate, which attains 22.2 per cent in 2010, against 20.2 per cent in the reference scenario. In this situation, the gain in well-being due to the reform is equivalent to a 12.6 per cent increase in disposable household income in 2010 relative to the reference simulation (Table 4.3). Economic growth now stands at 6.6 per cent and exports at 7.9 per cent a year, which makes it possible to finance an annual 7.1 per cent increase in imports. The investment rate in 2010 attains 26 per cent in this simulation, against 21 per cent in the reference simulation.

In the second case, where new investments are financed only by foreign saving (*EU3K2*), the gain in well-being is even greater: a 14.4 per cent increase in disposable household income. The new long-term equilibrium corresponds to a 6.5 per cent rate of accumulation, for a 14.1 to 14.7 per cent increase in observed return in 2010 compared to the reference scenario. Annual GDP growth stands at 6.8 per cent.

This second form of financing, based on FDI inflows, gives better results than the first for the simple reason that it eases the balance-of-payments constraint and allows more imports (especially of capital goods — see Table 4.5) for the same level of exports. This leads to an additional increase in total factor productivity and the available capital stock.

After 12 years, the accrued amount of new investment compared to simulation *EU3X* amounts to £E65 billion to £E95 billion, depending on the form of financing. In practice, the form of financing will probably be mixed and come partly from an increase in the household saving rate and partly from foreign direct investment. An increase in household saving will be encouraged not only by the growth of incomes but also by the maintenance of positive real interest rates, which requires the continuation of stabilisation efforts. Stability is also necessary if Egypt wants to benefit from the increase in its capital yield to raise its risk-yield ratio, which could encourage foreign investors to exploit the new investment opportunities. For the same reason, it is also necessary to continue the privatisation programme and liberalisation of services, and to introduce a right of establishment (Galal and Hoekman, 1996).

This potential investment and growth linked to the association agreement depends, however, on the achievement of significant productivity gains. Without such gains, the agreement does little for growth in Egypt. In contrast, it can prove extremely useful if it supports and encourages technological and quality improvements. The modernisation programme provided for in these agreements can play a decisive role in this respect, if it succeeds in increasing co-operation and technological exchange between EU producers and South Mediterranean producers (which it will probably encourage if it is demand-oriented and accessible to all).

We next address the question of how this opportunity for preferential co-operation and trade with the EU compares with a multilateral approach, or with pursuing additional bilateral and regional avenues with other partners.

Bilateral, Regional and Multilateral Strategies

Traditional neo-classical theory regards a regional approach as second best, inferior to a unilateral approach. The results of Chapter 2 are in accordance with this view, but they need to be re-examined in the light of the dynamic factors presented above. We therefore perform three more simulations corresponding to three strategies designed to support the association agreement; the latter, in its form *EU3X*, becomes the new reference scenario. Our analysis here does not address the investment which could accompany an increase in capital yield, but is confined to evaluating the extent

to which the free-trade agreements which we will describe can modify the Egyptian economy's growth through an increase in factor productivity generally, and in capital productivity in particular.

The first simulation (*EU3A*) retains the characteristics of deep integration with the EU and adds those of an identical level of integration with the other Mediterranean partner countries participating in the Barcelona initiative. Egypt's customs tariffs on MED products are reduced according to the same timetable as that for EU products, and we also assume a similar modification of the terms of trade with respect to the MED countries. It may be assumed that if Egypt succeeded in achieving successful deep integration with the EU, no great effort would be required to achieve deep integration with the Mediterranean partner countries involved in the same process, since these countries would already be moving in the same direction. Moreover, the Mediterranean partner countries have an incentive to participate, to avoid the risk of hub-and-spoke effects and to benefit from the regulations on cumulation of rules of origin in the area[8]. In July 1999, two initiatives were undertaken in this respect: Morocco, Jordan, Egypt and Tunisia plan to reduce trade barriers between themselves; and the Arab League countries signed a treaty to create a free-trade area covering the whole region in 2008.

Our results suggest, however, that integration between Egypt and the rest of the MED region is unlikely to create new opportunities for growth (Table 4.8). The GDP and capital stock growth rates remain at the levels observed in simulation *EU3X*. The reason is simple: since Egypt imports hardly any manufactured goods from the MED region, deep integration with this region is unlikely to promote technology transfers or capital formation. Nonetheless, there is a slight gain in well-being, owing to the increased access of Egyptian consumers to products from the MED region. The observed increases in the growth of aggregate imports and exports also indicate that there is trade creation. In other words, the additional gains from integration with the MED region after integration with the EU are primarily static, with no major effect on long-term growth.

Table 4.8. **Results of Various Supporting Trade Strategies**
(percentages)

	EU3X	*EU3A*	*EU3B*	*EU3C*	*EU3D*
Real GDP	6.4	6.4	6.5	6.8	6.7
Private consumption	6.0	6.0	6.1	6.5	6.3
Investment	7.3	7.3	7.4	7.9	7.7
Exports	7.6	7.7	8.0	8.7	8.5
Imports	6.8	6.9	7.2	7.9	7.6
Stock of physical capital	6.1	6.1	6.2	6.4	6.3
Return on capital	15.7	15.7	15.8	16.1	15.8
Factor productivity	1.5	1.5	1.5	1.7	1.6
Variation of well-being	9.2	9.5	11.2	16.6	13.7

Notes: The figures show average annual growth rates from 1995 to 2010, with the exception of the annual rate of return on capital and the variation of well-being; the latter is measured by the Hicks equivalent in 2010 (taking into account the variation in disposable income), deflated by the disposable income of the representative household in the reference scenario in 2010. *EU3A*: simulation of deep integration with the EU and the MED region; *EU3B*: simulation of deep integration with the EU, MED region and NAFTA; *EU3C*: simulation of deep integration with all trade partners (EU, MED, NAFTA, ROW); *EU3D*: simulation of deep integration with the EU and tariff dismantling *vis-à-vis* all trade partners.

The same results are obtained in the case of the NAFTA countries, with which Egypt began discussions on a free-trade agreement in April 1997. Deep integration with this region, accompanying integration with the EU and with the MED region, brings few dynamic gains in simulation *EU3B*. Despite a decrease in tariffs on industrial products from NAFTA and an improvement in the terms of trade with this region (in addition to the measures described in simulation *EU3A*), Egypt seems to obtain little additional growth from such a reform. This is explained by the fact that Egypt also imports few capital goods from the NAFTA countries and that tariffs applied to this area are already low compared to those of other areas. There is trade creation, however, which generates an increase in well-being.

Finally, we will simulate trade liberalisation for all of Egypt's partners (*EU3C*) along the lines of what Egypt might do with respect to Europe. The risk of trade diversion now becomes zero by definition, in contrast to what is observed under regional integration strategies. In the case of integration only with Europe, the increase in imports benefits Europe alone (Table 4.9), while the volume of imports from other areas decreases. In the case of liberalisation with respect to all partners, the rest of the world is the main beneficiary.

Table 4.9. **Origin of Imports in Various Scenarios**

	EU3X				*EU3C*			
	EU	*NAFTA*	*MED*	*RDM*	*EU*	*NAFTA*	*MED*	*RDM*
Primary products	0.4	0.4	0.0	0.1	0.8	1.5	0.1	0.7
Agri-food	0.6	0.0	0.0	0.2	0.9	0.3	0.0	1.3
Textiles	1.4	0.0	0.0	-0.3	0.6	0.2	0.1	2.2
Oil products	7.0	-0.1	-0.1	-0.6	7.7	1.3	0.5	5.1
Capital goods	17.1	-1.1	-0.3	-4.6	8.9	4.5	0.3	16.2
Other manuf. products	3.5	-0.4	-0.1	-0.9	1.8	0.2	0.5	2.4
Export services	0.5	0.2	0.0	0.5	1.5	0.8	0.1	1.5
Other services	0.8	0.4	0.1	0.8	2.5	1.3	0.2	2.5
Total	31.2	-0.5	-0.4	-4.8	24.7	10.1	1.7	32.0

Note: Results are given as differences with respect to the reference scenario in 2010, in billions of 1995 Egyptian pounds.

This policy leads to significant gains for growth (Table 4.8): annual growth increases by 0.4 percentage points over simulation *EU3X*, and trade (imports and exports) by 1.1 percentage points. Imports of manufactured goods more than double relative to simulation *EU3X* in 2010. Consequently, total factor productivity increases, and with the additional gains from factor reallocation, the competitiveness of Egyptian products increases significantly. Manufactured goods account for more than half of the growth in total exports (Table 4.10). Egypt continues to diversify its export industry, since exports of manufactured goods in 2010 represented less than 40 per cent of total exports in the reference scenario (Table 4.4). It should be noted that diversification was already under way in simulation *EU3X*, on a smaller scale but significantly nonetheless. This underscores the potential importance of the association agreement for a diversification strategy.

Table 4.10. **Destination of Exports in Various Scenarios**

	EU3X				*EU3C*			
	EU	NAFTA	MED	ROW	EU	NAFTA	MED	ROW
Primary products	0.8	0.1	0.3	0.4	2.1	0.2	0.9	0.9
Agri-food	0.2	0.0	0.0	0.1	0.3	0.0	0.1	0.4
Textiles	4.4	0.9	0.4	0.9	5.1	2.2	0.8	2.1
Oil products	1.2	0.2	0.2	0.5	3.4	0.4	0.4	2.5
Capital goods	3.5	0.1	0.7	0.8	6.7	0.5	2.4	2.8
Other manuf. products	0.2	0.0	0.1	0.2	0.3	0.1	0.2	0.5
Export services	2.7	0.9	0.8	1.5	4.3	1.4	1.3	2.3
Other services	0.3	0.1	0.1	0.2	0.5	0.2	0.1	0.2
Total	13.2	2.4	2.6	4.5	22.7	5.0	6.4	11.8

Note: Results are given as differences with respect to the reference scenario in 2010, in billions of 1995 Egyptian pounds.

Table 4.4. **Structure of Exports in 2010 in the Scenarios**
(percentages)

	REF	*EU1*	*EU2*	*EU3*	*EU3X*	*EU3K1*	*EU3K2*
Primary products	10.0	9.5	9.6	9.4	9.5	9.9	10.2
Agri-food	1.7	1.6	1.6	1.6	1.6	1.6	1.7
Textiles	18.4	18.6	18.5	19.9	20.2	19.5	19.1
Oil products	8.9	9.7	9.6	9.2	9.0	8.8	8.9
Capital goods	13.0	13.1	13.3	14.3	14.5	15.4	15.4
Other manuf. products	1.3	1.3	1.3	1.3	1.4	1.4	1.4
Export services	40.9	40.5	40.5	38.8	38.4	38.2	38.2
Other services	5.8	5.6	5.6	5.4	5.3	5.1	5.2
Manufactured exports	34.3	34.7	34.7	37.2	37.8	37.9	37.6

Note: The share of manufactured exports is the sum of exports of agri-food products, textiles, capital goods and other manufactured products.

It can be concluded from this exercise that the marginal gain in growth derived from liberalisation with other partners is slight compared to the gain from the association agreement: without taking into account possible inflows of additional investment, the association agreement entails a 0.6 percentage point increase in annual growth, compared to 1 point per year in the best-case scenario of liberalisation with all partners. This outcome is due to the fact that neither the MED region nor NAFTA is a major source for Egypt's imports of manufactured goods, especially capital goods, which are not only the imports most directly affected by trade liberalisation such as that envisaged with the EU, but also those most likely to lead to technology transfers and encourage capital formation.

Under these conditions, only non-preferential liberalisation is likely to bring faster growth than an association agreement. It may be asked, however, whether this unilateral strategy is feasible in the short term. While tariff dismantling does not raise practical problems, it would undoubtedly be more difficult to implement deep integration and greater technical co-operation with all Egypt's partners. A compromise approach could be considered: seeking deep integration only with the European Union, while dismantling customs duties for all partners in the same way. Scenario *EU3D* tries to

capture the results of this approach (see the last column of Table 4.8). It seems to provide opportunities for growth that are quite close to those of the entirely unilateral approach described in *EU3C*, while being much easier to implement: GDP grows by 6.7 per cent per year because of a high rate of capital accumulation (6.3 per cent) and a continuous increase in total factor productivity (+1.6 per cent per annum), which in turn is fostered by the growth of international trade.

The various numerical exercises conducted here suggest that an association agreement designed to promote deep integration with the EU, while limiting the risks of trade diversion, offers significant growth opportunities, since such an agreement would probably encourage diversification of Egyptian export industry — a prerequisite for successful integration in the international division of labour. On this condition, Egypt could benefit from opportunities for technology transfers and investments deriving from international trade.

This optimistic view nonetheless should not conceal the painful reforms Egypt must undertake in the short run if it wants to transform its rent-based economy into a dynamic trade-driven economy. These reforms are dictated not by any association agreement but by the internal structure of the economy, whose reliance on rents with an uncertain future places strong limits on its development potential. For this reason, perhaps the most optimistic scenario is not that of Egypt's integration with the EU, but the reference scenario, in which Egypt carries out deep restructuring with no outside support. Our results suggest, though, that an association agreement with the EU would facilitate the transition for Egyptian households, because it could lead to supporting measures and faster growth which might cushion the social impact of industrial restructuring.

The cost of this transition could be reduced still further if trade liberalisation were accompanied by reform of the Egyptian labour market. As will be seen below, it is probable that labour market conditions will largely determine the political feasibility of the reforms.

The Association Agreement and Employment in Egypt

Labour Market Conditions

According to the last Egyptian census, the labour force numbered about 17 million people in 1995, out of a working-age population of 35 million. The participation rate is thus rather low, especially among women (under 10 per cent). Officially, the country had 2 million unemployed at that time, consisting mainly of women, young people and skilled workers.

Egypt's labour market is segmented, like those of many countries in the region (Richards and Waterbury, 1996). There is little labour mobility among the three main segments: the public sector, the formal private sector and the informal sector. The

public sector (government and public enterprises) accounts for one third of total employment. Its wages are fixed by the government. Public sector workers enjoy many non-wage benefits, such as job security, pensions and working hours which often enable them to hold a second job (ACOCIE, 1996). In the formal private sector, the smallest of the three, workers have some protection and on average receive higher wages than in the public sector. The rest of the private sector comprises farmers and workers of the informal urban sector. The latter (individual entrepreneurs, employees of micro-enterprises, unskilled wage-earners of large enterprises) have no legal protection or safety nets, in contrast to the formal private sector. Their wages are flexible, as is also the case in the formal private sector, and respond quickly to changes in the economic climate (Pissarides, 1993).

Structural unemployment is partly explained by rigidities in the public sector. One of these is guaranteed public employment: until fairly recently, the government was formally committed to hiring any individual having exceeded a given educational level, generally the secondary level. Owing to an increasing supply of workers with the required qualifications, the government had to extend the waiting period, during which the candidate promised not to work in the private sector. In the 1980s, this compulsory waiting period reached eight years on average, which explained the particularly high unemployment rate among skilled young people (Assaad, 1997). This rule was gradually made more flexible after 1989, but still produces negative effects. Demand for public employment remains very high because of the non-wage benefits, despite a relative decline in wages in this sector. It is particularly high among women because of the discrimination against them in the urban private sector, which leads them to apply for public employment or not to participate in the labour market at all. Women are therefore almost exclusively employed in the civil service and in agriculture.

Generally, the Egyptian labour market seems to have structural difficulties in matching labour supply and demand. On one hand, the formal private sector is continually looking for skilled workers, still in short supply relative to demand (Radwan, 1998). This imbalance is increased by the fact that a significant proportion of skilled workers are confined to unskilled occupations, or even unemployed, because of the segmentation and discrimination described above. On the other hand, workers, especially young people, balk more and more at agricultural work (Pissarides, 1993), which traditionally absorbed the labour surplus; this role is now filled by the services sector, which benefits from the protection brought by overvaluation of the real rate exchange.

General Equilibrium Modelling of the Labour Market

In order to introduce labour market characteristics in our analysis of regional integration, we must make some additional assumptions, in particular to deal with a lack of reliable sectoral data. We assume, for example, that informal sector workers

perform only unskilled labour and are present in all activities. The segment of unskilled private sector workers therefore resembles that of informal sector workers. Our model includes eight segments of workers, defined by the various combinations of three criteria: qualifications, employer and place of work.

In practice, skilled workers are distinguished from unskilled by their higher wages (Assaad, 1997), higher unemployment rate (Radwan, 1998) and higher participation rate. "Skilled" workers are defined narrowly here as only those workers having reached at least the university level, which seems to be the effective criterion recognised by the market (Fergany, 1998*b*). Public and private sector workers are differentiated by the dualism mentioned above. Finally, the geographical distinction between urban and rural workers is significant, not because the cost of migration is high (the Egyptian population is highly concentrated around the Nile), but rather because rural trades are not very attractive for new entrants.

We thus consider eight types of workers (2^3), by crossing our three dimensions. To calibrate the model in a way that takes account of this segmentation, we must allocate these types of workers by sector of activity. As the most recent data for this are from 1988, we estimate the distribution using the 1995 totals by type of worker and by sector, and retaining the structure observed in 1988[9]. This estimate is given in Table 4.11. The table illustrates several aspects of the labour market which should be borne in mind when analysing the possible effects of integration: 84 per cent of the workers are unskilled according to our definition. Agriculture accounts for 43 per cent of private sector employment, which explains the predominance of unskilled workers in rural areas. In the public sector, only 25 per cent of employment involves market activities. Finally, if it is assumed that the manufacturing sector is the most likely to be restructured after an association agreement, it is interesting to note that this sector accounts for only 14 per cent of total employment, but half of employment in public enterprises.

Table 4.11. **Estimated Sectoral Distribution of Labour in 1995, by Type of Labour**
(thousands)

	Agr.	Min.	Mnf.	Elc.	Cst.	Trp.	Srv.	Gov.	Unem.
Rural unskilled public	0	0	196	0	60	37	57	1 278	870
Rural skilled public	0	0	20	0	0	0	0	438	140
Rural unskilled private	4 439	0	456	11	333	173	740	0	0
Rural skilled private	104	1	13	0	1	0	46	0	0
Urban unskilled public	3	0	370	28	1	60	14	1 393	651
Urban skilled public	199	0	78	35	38	43	120	846	250
Urban unskilled private	78	10	865	7	425	296	1 320	0	0
Urban skilled private	10	18	68	0	48	43	238	0	0
Total	4 834	29	2 065	81	906	653	2 536	3 955	1 910

Notes: Agr.: agriculture; *Min*.: mining; Mnf.: manufacturing industries; Elc.: electricity and gas; Cst.: construction; Trp.: transport and communication; Srv.: other services; Gov.: government; Unem.: unemployment.

Source: Authors' calculations.

Calibration of the model also requires information on wage levels by sector and by type of worker. These are also estimated for 1995, based on the econometric work of Assaad (1997), who estimates wage functions for workers, depending on the type of employer, qualifications, sex and place of work. These estimates enable us to estimate average wages for each of the eight types of workers considered for 1994. Our estimates suggest that wage inequalities are relatively small, with a spread of about 1 to 3 (Table 4.12, last column). The lowest wages are those of unskilled rural public sector wage-earners, and the highest those of skilled workers of the urban private sector.

Table 4.12. **Estimated Sectoral Distribution of Wages in 1995, by Type of Labour**

	Agr.	Min.	Mnf.	Elc.	Cst.	Trp.	Srv.	Gov.	Av.
Rural unskilled public			0.7		0.4	0.7	0.6	0.3	0.6
Rural skilled public		1.8	1.3					0.5	1.3
Rural unskilled private	0.6		0.9	1.7	0.5	0.9	0.9		0.6
Rural skilled private	1.3	2.7	1.9		1.1	1.9	1.8		1.5
Urban unskilled public	0.6	1.1	0.8	1.5	0.5	0.8	0.8	0.3	0.9
Urban skilled public	1.1		1.6	2.9	0.9	1.6	1.5	0.7	1.4
Urban unskilled private	0.7	1.4	1	1.8	0.5	1	0.9		0.8
Urban skilled private	1.4	2.9	2.1		1.1	2.1	1.9		1.9
Average		0.7	2.3	1.0	2.2	0.6	1.1	1.0	0.4

Notes: Agr.: agriculture; Min.: mining; Mnf.: manufacturing industries; Elc.: electricity and gas; Cst.: construction; Trp.: transport and communication; Srv.: other services; Gov.: government; Av.: average. Wages are normalised relative to those of unskilled urban workers in the manufacturing sector.

Source: Authors' calculations.

Based on these estimates of employment and wages, we can calculate the wage bill by sector and compare it with the figure in the social accounting matrix. The difference between the two can be attributed to various factors, such as the influence of trade unions in the determination of efficiency wages, which encourages employers to offer higher-than-equilibrium wages in order to keep their workers and encourage them to be productive. This seems to be particularly true of the electricity and mining sectors (Table 4.12, last line); however, these sectors together account for no more than 1 per cent of the total volume of employment. We consider this sectoral difference in remuneration for the same type of worker as being permanent. This difference affects workers' *ex post* incomes but not their decision to change sectors; the latter is based on the market equilibrium wage for each type of labour, since labour is supposed to be completely mobile within each segment.

The existence of such segments is the main difference between the modelling used here and that in the preceding sections. In the short run, these segments limit potential factor reallocation in response to economic conditions, since equilibrium is reached within each segment instead of for the entire labour market. A second difference lies in the adjustment to shocks within each segment: some are competitive and adjust imbalances between supply and demand by prices (wages); others are rigid and adjust their imbalances by quantities (the number of jobs), which can cause unemployment.

Two supply factors increase the labour market's flexibility. One is the medium-term migration of workers from one segment to another. We assume that in each period each worker compares the expected wage in his or her segment (that is, average wages received multiplied by the probability of finding a job) with the expected wages of the other segments. Differences relative to the 1995 situation prompt workers to change segments between two simulation periods[10]. The possibilities of migration are limited, however: an unskilled worker cannot become skilled (and conversely). Moreover, because of the poor dissemination of information and the lack of mechanisms able to match supply and demand, we assume that each worker can modify only one characteristic at a time: for example, between two periods a worker of the urban public skilled segment can migrate to the urban private skilled segment or the rural public skilled segment, but cannot move directly to the rural private skilled segment. Migration occurs between two periods. The net supply of migrants in each segment is given when the model determines the equilibrium. Agents base their decisions to migrate on past observations.

The second supply factor, which increases flexibility in the shorter term, is the variation of the participation rate in each private sector segment. We assume that a rise in real wages encourages those who are not economically active to enter the labour market. In this respect, we distinguish between the behaviour of skilled and unskilled workers: skilled workers are less sensitive to wage fluctuations since their decision to work is largely the outcome of a prior investment in education. We also assume that to compensate for the lack of jobs in the public segments and the lack of unemployment insurance, half of the unemployed actually work in the informal sector (i.e. the unskilled private sector): a person waiting for a public job can therefore either remain unemployed (this is especially the case for women, who cannot easily gain access even to the informal segment of the private sector) or take an unskilled job in the informal sector (even if the worker in question is skilled).

Labour demand is modelled more simply. Government demand for administrative employees is exogenous. This demand is not determined by economic conditions, nor are the wages of civil servants. We assume that real wages remain constant at their 1994 value. Labour demand of public and private enterprises is the result of their cost minimisation processes. Private sector wages equalise labour supply and demand. Changes in nominal wages in public enterprises follow the same pattern as civil servants' wages and are therefore exogenous.

The Association Agreement and Labour Market Reform

We simulate the impact of the association agreement again using this modified model incorporating labour market rigidities. Lack of information on employment and wages obliges us to use a version with greater sectoral aggregation: we now distinguish among 14 sectors instead of 30. The model includes two types of households, rural and urban, each offering four types of labour, which gives us our eight segments. Other aspects of the model are the same as before.

As in the previous analysis, we define a reference scenario (*REFL*) which will be compared with various alternative scenarios, in order to evaluate job creation by the measures tested. This reference scenario incorporates all the characteristics of the preceding one as well as our assumptions concerning labour supply and demand. First, we assume that the government freezes hiring at its 1994 level, so that the number of workers employed by government (excluding public enterprises) remains constant throughout the period. Other government expenditure is calibrated to preserve the same assumed evolution of aggregate public consumption as in the preceding reference scenario. Second, following Radwan (1998), we assume that there are 450 000 new entrants on the labour market each year until 2010. Population projections by region and educational level, in addition to our assumptions concerning migratory movements and participation rate, then allow these entrants to be distributed among the eight segments of the reference scenario until 2010[11] (Table 4.13).

Table 4.13. **Change in Labour Supply in the Reference Scenario**
(percentages)

	1995-1998	1998-2001	2001-2004	2004-2007	2007-2010
Rural unskilled public	2.4	1.9	1.5	1.1	0.8
Rural skilled public	2.8	2.1	1.5	1.1	0.8
Rural unskilled private	4.0	3.9	3.8	3.8	3.7
Rural skilled private	3.8	4.4	4.6	4.6	4.4
Urban unskilled public	2.7	2.3	2	1.8	1.5
Urban skilled public	3.2	2.8	2.5	2.4	2.2
Urban unskilled private	4.1	4.2	4.2	4.4	4.3
Urban skilled private	3.9	4.4	4.7	4.8	4.7
Rural population	1.3	1.2	0.9	0.5	0.4
Urban population	2.6	2.6	2.7	2.7	2.7

Note: The figures shown are average annual growth rates.

Despite the assumption of rapid growth (5.8 per cent per annum) and a decline in the attractiveness of public employment, unemployment remains high in the reference scenario. The unemployment rate, which measures the proportion of the labour force which chooses or is obliged to wait for public employment, falls from 11.3 per cent in 1995 to 9.9 per cent in 2010, but this represents a 40 per cent increase in the number of unemployed, taking into account the growth of the working population. This overall figure masks divergent trends by segment: the unemployment rate of unskilled workers falls from 10.7 per cent in 1995 to 8.5 per cent in 2010, while that of skilled workers sharply increases from 13.9 per cent to 17.1 per cent (Table 4.14).

In all, slightly under 10 million new jobs are created during the 1995-2010 period, which gives an average annual growth rate of 3.3 per cent. Thus the job content of growth is limited, since the elasticity of employment with respect to GDP remains well below one, as Fergany (1998*a*) observes for the 1990s. Seventy per cent of the jobs created are in sectors which are not strongly oriented towards trade with the outside world: agriculture, services and construction (Table 4.16).

A first alternative scenario (*EU1L*) simulates tariff dismantling for European industrial products only, as described in Table 2.9. At the macroeconomic level, the results are comparable to those of simulation *EU1*. However, this new simulation makes it possible to indicate the impact of this measure on well-being and employment. Urban households experience a loss in well-being, in contrast to rural households. There are two reasons for this phenomenon, which was also observed in Tunisia: *i)* without reform of the fiscal system, urban households bear the brunt of compensation for lost tariff revenue, and *ii)* effective protection of the industrial sector, which is concentrated in urban areas, tends to decrease compared to that of agriculture. In all, 90 000 new jobs are created (130 000 jobs created, 40 000 destroyed), almost entirely in services (Table 4.16). The unemployment rate falls only slightly (from 9.9 to 9.7 per cent). Despite an increase in investment and in the participation rate, which facilitates industrial restructuring, the job content of growth is unchanged after tariff dismantling.

Table 4.14. **Results of the Scenarios with Labour Market Rigidities**

Simulation	1995	2010	*EU1L*	*EU3XL*	*EU4XL*	*EU5XL*	*EU6XL*
GDP	193.1	449.9	0.7	5.7	6.5	6.8	7.6
Exports	44.6	105.2	4.5	9.9	10.8	11.1	11.9
Imports	54	113.7	4.1	11.2	12.0	12.3	13.1
Well-being of rural household (%)			0.6	5.5	6.5	6.6	7.6
Well-being of urban household (%)			-1.3	4.4	5.1	5.5	6.0
Total jobs	16 013	25 912	+ 88	+ 505	+ 753	+ 690	+ 950
Public jobs	5 313	7 001	+ 23	+ 142	+ 325	+ 178	+ 377
Private jobs	10 700	18 912	+ 64	+ 361	+ 427	+ 510	+ 552
Unskilled jobs	13 605	22 369	+ 75	+ 437	+ 589	+ 428	+ 582
Skilled jobs	2 408	3 544	+ 12	+ 67	+ 163	+ 260	+ 348
Participation rate	28.6	35.8	35.9	36.4	36.5	36.7	36.8
Job content of growth		56.2	56.1	54.8	55.4	54.9	55.5
Unemployment rate	11.3	9.9	9.7	9.1	8.2	9.3	8.3

Notes: Macroeconomic variables are given in billions of 1995 Egyption pounds in the first two columns. The following columns show the relative variation compared to the reference scenario in 2010. The indicator of well-being is calculated by the Hicks equivalent deflated by the disposable income of the representative household in the reference scenario in 2010. The employment variables are given in thousands. The first two columns give the number of jobs and the following columns show the difference relative to the reference scenario in 2010. The participation rate is the ratio of the working population to the total population. The job content of growth is the ratio of the annual growth of employment to GDP. *EU1L*: tariff dismantling for European products; *EU3XL*: *EU1L* + transfers by the EU and improved terms of trade *vis-à-vis* the EU, with externalities taken into account; *EU4XL*: *EU3XL* + increased flexibility in the determination of public wages; *EU5XL*: *EU3XL* + increased access to the modern private sector for public sector workers; *EU6XL*: *EU3XL* + increased flexibility in the determination of public wages + increased access to the modern private sector for public sector workers.

It can be assumed, however, that the association agreement will also have the effect of encouraging technology transfer and attracting new investments. These two phenomena can have major consequences for the labour market. The expected increase in economic activity should have a positive impact on demand for labour, via a scale effect. An increase in the growth rate can lead to a rise in labour demand in *all* sectors, even though the comparative advantage of some does not increase with liberalisation.

The effect on the job content of growth is more difficult to perceive *ex ante*. It depends in particular on two factors which will determine *in fine* the new type of specialisation of Egyptian industry: the extent of substitutability/complementarity between physical capital and labour on the one hand, and between technical progress and unskilled labour on the other. If structural rigidities prevent labour from redeploying to the sectors presenting the greatest growth possibilities after liberalisation, entrepreneurs could choose to adopt labour-saving technologies instead of taking advantage of the lower cost of capital to increase productive capacity.

Table 4.16. **Employment by Sector**

Simulation	1995	2010	*EU1L*	*EU3XL*	*EU4XL*	*EU5XL*	*EU6XL*
Agriculture	5 210	8 956	0	2	2	2	3
Mining	31	25	-1	-4	-4	1	0
Manufacturing industries	2 232	4 542	0	3	6	4	6
Agri-food	401	723	-1	2	4	2	5
Cotton	17	46	5	10	13	10	13
Textiles	550	1 293	3	8	11	8	11
Petrochemicals	323	526	0	2	5	3	5
Construction materials	95	166	-1	2	4	2	4
Capital goods	548	1 191	-2	1	4	1	4
Other manuf. products	297	597	-1	1	4	2	4
Electricity	82	174	0	4	12	4	14
Construction	997	1 798	1	3	4	3	4
Transport & communication	711	893	2	0	1	0	1
Other services	2 795	5 570	1	2	3	5	5

Note: The two first columns indicate the volume of employment (thousands of jobs) in 1995 and 2010 in the reference scenario, *REFL*. The following columns give the relative variation in the number of jobs in 2010 compared to the reference scenario.

We try to measure this net effect on employment by simulating the "enlarged" version of the association agreement, as described under the designation *EU3X*. In addition to tariff dismantling, this scenario (*EU3XL*) simulates an improvement of Egypt's terms of trade with respect to the EU and increased transfers of funds; it also assumes that imports of manufactured goods have a positive impact on factor productivity (equation 4.1).

The results show significant increases in GDP, capital stock and international trade flows, but these increases are smaller than those observed when there are no labour market rigidities. The latter limit the reallocation capacity of the Egyptian economy and the job content of growth, which even tends to decrease compared to the reference scenario. Net job creation (+500 000 in 2010 compared to the reference scenario) is thus largely the result of a scale effect. This can be inferred in particular from the fact that employment increases in agriculture and services, although these sectors draw no particular benefit from tariff dismantling. This scale effect reduces the unemployment rate (from 9.7 to 9.1 per cent in 2010), but brings no significant drop in the number of unemployed, because of the increase in the participation rate. It also considerably reduces job destruction, which becomes marginal in this simulation.

Export industries no longer develop at the expense of industries which compete with imports: the former benefit from the increase in the participation rate, while the latter benefit from an increase in demand for their products owing to the rise in incomes. This effect was observed in Mauritius after liberalisation (Milner and Wright, 1998).

Real wages in the private sector increase because of productivity gains and greater capital availability, but also because labour market segmentation results in an inadequate supply of labour in the segments to which demand turns after liberalisation (especially the textile industry). This causes an increase in the cost of labour relative to that of capital. The rise in real wages, which benefits workers already employed in the private sector, has two disadvantages: it limits expansion in the most labour-intensive industries (construction, textiles) and reduces the return on capital. Indeed, no increase in capital yield is observed in this simulation, contrary to what could be observed in same simulation if there were no labour market rigidities. The presence of such rigidities thus tends to limit the demand for capital and seems to indicate that labour and capital are actually more complementary than substitutable.

This scenario provides only partial support for argument that liberalisation primarily favours skilled workers and capital. Our results suggest that it primarily favours workers who are already employed, particularly skilled workers. But this is less an effect of external liberalisation than a reflection of the fact that employed workers enjoy a pure economic rent due to market segmentation. As we will see, skilled workers would have more to fear from market desegmentation than the unskilled, because the unemployment rate of the former is higher than that of the latter. On the other hand, the argument concerning a possible substitution of capital for labour is less clear, since it seems that the labour shortfall in the most buoyant activities actually decreases capital yield and hence demand for capital.

Deep integration with Europe is thus unable to modify the incentive structure sufficiently to reduce the problems of poor allocation of labour and underemployment. The existing rigidities even tend to reduce greatly the growth potential that insertion in a larger international division of labour could encourage by favouring productivity gains and investment. Restructuring of economic activity remains inadequate compared to that observed previously; this limits productivity gains and, consequently, incentives to invest in Egypt. The regional nature of the liberalisation has no fundamental influence on this conclusion. When we simulate deep integration with Europe accompanied by unilateral tariff dismantling (the equivalent of simulation *EU3D*), unemployment still reaches 8.7 per cent in 2010, and more than 15 per cent for the skilled sub-group. The job content of growth is again reduced (results not reported).

Under these circumstances, this problem must be solved domestically through measures aimed at improving the allocative efficiency of labour markets. Desegmentation of labour markets is definitely a long-term task, which will require massive investments in education and major institutional reforms to improve the ability of markets to match supply and demand. Some rigidities, however, can probably be reduced by reforms in the shorter term. We simulate two such reforms to accompany integration with the European Union.

The first measure (*EU4XL*) introduces some flexibility in the method of wage determination in public enterprises. For this purpose, we replace the rule of fixed real wages by a new function for wage determination, which resembles a Phillips curve: the growth of real wages is a negative function of the growth of unemployment in the segments considered. For government officials, however, the rule of constant real wages remains unchanged. This scenario can be interpreted as a gradual deregulation of the public manufacturing sector.

The results of this simulation suggest that this measure brings a large increase in the Egyptian economy's ability to create new jobs after trade liberalisation. The job content of growth increases compared to scenario *EU3X* — a total of 750 000 jobs are created — and growth is also higher. Unemployment is reduced to 8.2 per cent in 2010. Skilled unemployment decreases more rapidly, from 17.1 per cent in the reference scenario to 13.5 per cent in this scenario in 2010. Job creation is now distributed equally between agriculture, industry and services. The noteworthy feature of this scenario is that significant new job creation is observed for the first time in the manufacturing sector. This result is largely due to the fact that a large proportion of manufacturing industries belong to the public sector and that after this reform they can benefit more from the opportunities provided by liberalisation.

The fall in wages of skilled public sector workers tends to reduce the wage differential between skilled and unskilled workers, and between civil servants and workers in public enterprises. In contrast, it clearly increases the differential between workers of the private and public sectors (Table 4.15), especially in rural areas. There is thus a considerable risk that the reform would be opposed by public sector employees, especially those who are skilled. This risk is even greater in this scenario because of the continued discrimination against women, who do not have access to the private formal sector. Thus public sector employees see their situation deteriorate without a real possibility of redeployment.

Table 4.15. **Real Wages in the Scenarios**

Simulation	1995	2010	*EU1L*	*EU3XL*	*EU4XL*	*EU5XL*	*EU6XL*
Rural public unskilled	4.6	4.6	4.6	4.6	4.4	4.6	4.4
Rural public skilled	9.9	9.9	9.9	9.9	7.3	9.9	6.6
Rural private unskilled	4.9	8.0	8.1	8.4	8.5	8.6	8.7
Rural private skilled	11.7	15.2	15.3	15.9	15.8	9.5	9.9
Urban public unskilled	6.6	6.6	6.6	6.6	6.2	6.6	6.3
Urban public skilled	10.8	10.8	10.8	10.8	9.6	10.8	9.0
Urban private unskilled	6.0	9.4	9.5	9.9	10.1	10.4	10.5
Urban private skilled	14.7	19.3	19.5	20.2	19.9	15.6	16.7

Note: Real wages are nominal wages divided by the GDP deflator. The wages are annual and given in thousands of 1995 Egyptian pounds. The two first columns give the value of wages in 1995 and 2010 in the reference scenario, *REFL*. The following columns give the value of wages in 2010 in the alternative scenarios.

We then consider a second measure to reduce the barrier between the public and private segments. It consists in encouraging access to the private sector for the unemployed by providing public maternity benefits, instead of letting private sector enterprises alone bear maternity costs, and by officially giving candidates waiting for

public jobs the right to work in the private formal sector. We test the impact of this measure (*EU5XL*) by simulating a progressive increase in access to the private sector for the unemployed, to accompany deep integration with the European Union. In 2010, half of the skilled unemployed (who previously worked in the informal sector) have entered the formal private sector. The situation of the unskilled unemployed who worked in the informal sector is unchanged, except that they no longer face competition from the skilled unemployed in this sector.

The first effect of this scenario is to convert unskilled employment into skilled employment, which has a positive impact on aggregate productivity and growth. There is increased well-being for urban households, which include the largest proportion of skilled workers. This scenario leads to a fall in the wages of skilled private sector workers, who have to face an influx of new workers. In contrast, unskilled wages rise. In relation to the reference scenario, 690 000 new jobs are created, mainly in agriculture and services, because the rule of wage determination in public enterprises is not modified in this simulation. The rise in unskilled wages leads 650 000 economically inactive people to enter the labour market. This huge inflow of formerly inactive unskilled workers (women, Egyptian emigrants) has the effect of keeping the official unemployment rate high, at 9.3 per cent in 2010. This underlines the importance of the supply response to such reforms: owing to the potentially large number of workers who can quickly enter the Egyptian labour market, a reform which increases unskilled real wages relative to skilled wages may not have much effect on the unemployment rate, even if it proves highly effective in creating jobs.

In practice, the effective unemployment rate is lower because only half of the unemployed lack access to a type of employment suited to their qualifications. The official rate remains significant, however, because it reveals the continuing attraction of public employment, and thus the potential opposition to privatisation. The potential opposition is probably greater here, since this time it is the skilled private sector workers employed before the reform who are put at a relative disadvantage. Their real wage nevertheless rises compared to that of 1995, and also compared what they would obtain if the same desegmentation measure were applied without trade liberalisation (results not shown).

A last simulation (*EU6XL*) combines the two preceding ones, namely greater flexibility in real wage determination in public enterprises and measures to promote access to the formal private sector for workers in the public segment, especially women. This scenario maximises the growth and employment potential of integration, with 950 000 additional jobs created in 2010, including 350 000 skilled jobs. Manufacturing industries, which present the best opportunities for growth after liberalisation, can satisfy their demand for labour and begin to expand. Unskilled workers are the big winners from this reform, which should help to reduce poverty. Finally, for the first time an appreciable increase in the return on capital is observed, which suggests once again that investment can be encouraged by labour market reform.

This simulation underlines once again, and more emphatically than any of the others, the complementarity between domestic and external reforms from the standpoint of both effectiveness and political feasibility. Although the numerical exercises carried

out here are based on uncertain data and questionable assumptions, they have the merit of offering coherent results. In particular, they suggest that the growth potential of Egyptian-European integration would be considerably reduced by the rigidities of the Egyptian labour market, since this potential resides mainly in the development of labour-intensive manufacturing industries. Conversely, needed reforms of the labour market would be difficult to implement without trade integration, because in this case private sector employees would have to pay a heavy price and/or public sector employees would have no incentive to migrate to the activities presenting the greatest opportunities for development.

Conclusion

Over the next ten years, Egypt will face two major challenges: a considerable reduction of its traditional rents and a massive influx of new entrants onto the labour market. It will have to reconsider its development strategy, basing its new strategy on the opportunities provided by integration into the international division of labour. This should allow it to reduce the risk of a balance-of-payments crisis in the short term and to increase the job content of growth in the medium term.

Our simulation exercises suggest that signing an association agreement with the EU can make it easier for the Egyptian economy to diversify and become integrated in the world market. Moreover, if this agreement is designed in such a way as to reduce segmentation between the Egyptian and European markets through a process of deep integration, it will provide significant potential for growth, in particular via an increase in technology transfers. For this reason, it could ease the transition for Egyptian households by reducing the social costs of industrial restructuring.

Complementary free-trade agreements with NAFTA or the Arab League are desirable if they are in keeping with the principles of "open regionalism", but their potential is more limited. If these agreements were to reduce the scope of the harmonisation of trade rules and procedures with Europe, they would even have a rather unfavourable effect. Actually, the real risk of trade diversion is a reduction of trade with Egypt's other partners, especially in Asia. Although deep integration with the "rest of the world" is difficult to realise in practice, it is desirable to try to reconcile the regional and multilateral strategies by granting the same tariff preferences to all partners while proceeding with deep integration with the EU.

These opportunities can be realised only if Egypt undertakes complementary domestic reforms at the same time. Without extensive reform of the labour market, Egypt would only obtain slight benefits from trade liberalisation, because there would be an inadequate supply of workers in the sectors where it could have a comparative advantage, and which are fairly labour-intensive. Conversely, without trade liberalisation the political feasibility of desegmenting the labour market would be limited, because desegmentation would have a high cost for employed workers without a real trade-off in job creation.

Notes

1. The volatility of the purchasing power of Egypt's export earnings in foreign exchange is considered high relative to that of other economies in North Africa and the Middle East having more diversified structures. For example, Riordan *et al*. (1998) estimate that this volatility, measured as the standard deviation of a regression of the purchasing power of exports on a linear trend, is nearly 30 per cent.

2. See the study by Weiss and Wurzel (1998), who provide a more general explanation of why the inflows of rents made the Egyptian political system hostile to adopting reforms which would have made it possible for Egypt to face international competition.

3. Our analysis does not take into account non-tariff barriers of all kinds, particularly in services, for which we do not have reliable data. Konan and Maskus (1997) attempt to estimate the impact of reduction of such barriers using a static general equilibrium model, but their simulations are based on *ad hoc* estimates of levels of non-tariff protection, which in our opinion is not very instructive.

4. Rutherford, Ruström and Tarr (1995), Konan and Maskus (1997), Hoekman and Konan (1999). The latter two studies assume that deep integration would lead to reduction of Egypt's non-tariff barriers, which are assumed to stem from the use of standards, regulations and procedures which hinder trade. Unfortunately, there are no available sectoral data concerning these barriers, so the authors arbitrarily use a non-tariff barrier of 15 per cent in services and 5 per cent in other sectors — an assumption that greatly affects their results. Faced with this level of uncertainty, we prefer an approach which reduces the barriers to the Egyptian market uniformly by adopting a lower international price for European products, as in Rutherford, Ruström and Tarr (1995). Furthermore, this same uncertainty about the dimensions of this type of non-tariff barrier on the European market led Konan and Maskus (1997) and Hoekman and Konan (1999) to adopt this type of simulation to express the impact of deep integration on Egyptian exports to the EU.

5. Compared to disposable income in the reference scenario for the same year, the gain in well-being in simulation *EU3* is 0.2 per cent in 1998, 0.7 per cent in 2001, 1.1 per cent in 2004, 1.5 per cent in 2007 and 1.7 per cent in 2010.

6. All data used here are from the World Bank (1998*b*). The capital stock is constructed using the perpetual inventory method with a depreciation rate of 4 per cent. In practice, we extend the series for Egypt constructed by Nehru and Dhareshwar (1993) for the 1950-90 period. The physical capital stock increases by 8 per cent a year between 1966 and 1996. It is equal to 2.77 times GDP in 1994.

7. Among the changes cited by de Melo and Robinson (1992) are increasing use of intermediate goods in production, rapid development of light industry and increased demand for tradeable goods.

8. Cumulation of rules of origin does not necessarily accompany the signing of a Euro-Mediterranean agreement. In practice, however, the EU allows partial cumulation to some Mediterranean partner countries which have already signed an association agreement, such as Morocco and Tunisia.

9. The method involves minimising the sum of the Euclidean distances which separate the observed proportion of each type of worker in each sector in 1988 from that which verifies the totals observed in 1995, by type of worker and by sector.

10. Non-wage benefits, which are a privilege of public sector workers in particular, remain constant. While these benefits probably affect the initial distribution of workers within each segment, we assume that they do not change over time. Migratory movements are affected only by wages and observed unemployment rates.

11. The projected annual rate of population growth between 1995 and 2010 is 0.8 per cent in rural areas and 2.7 per cent in urban areas. We assume that the participation rate increases at the same rate in the two areas and that growth of the skilled population is 20 per cent higher than that of the unskilled population, to account for the efforts made in education. Using these assumptions, we then perform a first simulation in which the share of workers seeking jobs on the public segment is constant; the sole purpose of this is to estimate the direction and intensity of migratory movements, which enables us to define the reference scenario in which migratory movements are almost non-existent.

Appendix

Models

To evaluate *ex ante* the domestic effects of the Euro-Mediterranean agreements, we decided to use computable general equilibrium models to simulate economic policies. This appendix presents the main characteristics of the basic model, several versions of which were used in the study. It also gives the characteristics of the Tunisian and Egyptian versions.

This model draws on the model developed by the OECD Development Centre to analyse trade policies. Readers can consult Beghin *et al.* (1996) for a detailed presentation of the theoretical model, as well as OECD (1997*b*), Dessus and Suwa-Eisenmann (1998), Dessus and Suwa-Eisenmann (1999) and Chemingui and Dessus (1999) for a description of the applied models that we use in this study.

General Characteristics

Production

The constant elasticity of substitution (CES) production function is constructed in such a way as to represent successive decisions in the choice of production factors, determined by the desire to minimise production costs. The production function has constant returns to scale. First, output is decomposed into two aggregates: intermediate consumption excluding energy, and value added plus energy consumption. Intermediate consumption demand for each product is fixed (Leontief structure) once the aggregate level of intermediate consumption is defined. Demand for value added and energy is then broken down into two sub-aggregates: aggregate labour, and capital plus energy consumption. Demand for labour can then be broken down into several categories of labour. Labour is perfectly mobile within each segment. The wage determination rule in each segment determines whether there is full employment or under-employment. The composite capital-energy factor is disaggregated into capital and energy consumption. Demand for physical capital distinguishes between "old" and "new" capital. The models thereby incorporate the notion of capital "generation", to distinguish the allocation of capital which was already installed at the beginning of the period from that of current investment capital (a putty/semi-putty production function). "New"

capital can be allocated much more flexibly than "old" or, already installed, capital. It is more substitutable with other types of capital (land and natural resources, which are also incorporated in this aggregate). Greater investment increases the productive sector's capacity for adjustment to changes in the vector of relative prices. Finally, the energy aggregate can be disaggregated into different types of energy (e.g. oil and gas resources, electricity), for which there are distinct and substitutable levels of demand.

Income Distribution and Absorption

Income from labour is distributed among the different households by a normalised distribution matrix with fixed coefficients. Income from capital is allocated in the same way among households, businesses, government and foreign investors. Businesses pay a tax on this income to the government and save the remainder. Household demand is derived from a programme maximising (in accordance with the extended linear expenditure system developed by Lluch, 1973) the utility function specific to each household, subject to disposable income and the consumer price vector. Household utility is a positive function of consumption of different products and saving. Income elasticities are differentiated by products and households: the lowest are for the consumption of staple goods by households with the highest incomes, and the highest for leisure and luxury goods. The share of the various products in government demand and in investment demand is fixed once the aggregate levels of these types of demand are determined.

International Trade

It is assumed that products are differentiated by their geographical origin. Import demand is derived from a CES function incorporating domestic and imported goods (Armington, 1969). Export supply is modelled symmetrically according to a constant elasticity of transformation (CET) function. Relative prices determine producers' decisions on how to allocate their production between the domestic and foreign markets. For each model, the elasticity of substitution between domestic and imported products is 2.2 and that between imported products of different origin (EU or rest of the world) is 5. The elasticity of transformation between the products intended for the domestic market and exported products is 5 and that between products for different export destinations is 8. The "small country" assumption is used to determine world prices, so that the prices of imports and exports are exogenous, as are capital transfers. The equilibrium of the balance of payments therefore sets the value of the trade balance.

Model Closure and Dynamics

In addition to the equilibrium of the balance of payments, there are several other equilibrium conditions allowing the model to be solved for each period. One of them involves the fiscal balance. Once the position of public revenue and expenditure

is fixed exogenously, a fiscal instrument (tax, expenditure) is adjusted endogenously to obtain the predetermined fiscal balance. A second condition requires that the volume of investment be equal to the amount of available saving, whether it comes from households, government or foreign sources.

The preceding characteristics are found in both the static models (used in Chapter 2) and the dynamic models (Chapters 3 and 4). Additional modelling choices are made for the latter.

The model's main endogenous dynamic stems from the identity between saving (from households, enterprises, government and foreign sources) and investment. A variation in the amount of saving modifies the dynamic of capital accumulation. The capital stock accrues by the investment from the previous year less physical depreciation, according to the perpetual inventory method. In addition, several hypotheses are used to deal with the exogenous factors which affect the economy's growth path: the growth rates of the population and the labour supply, of the productivity of labour and capital, and of natural resources and available arable land. Agents do not express expectations. The model's dynamic thus resembles a sequence of static equilibria.

A second difference between static and dynamic models has to do with measuring changes in well-being. Static models measure the amount needed after the reform to obtain the same level of utility as before the reform (compensatory variation). To the compensatory variation, dynamic models add the change in households' disposable income, which is affected by changes in factor prices and demand (e.g. in the event of unemployment) and by the means of compensating for the loss of tariff revenue. This measurement was proposed by Sadoulet and de Janvry (1995). If E is the monetary equivalent of the utility function and y disposable income, then for period t the measurement is expressed as:

$$(y^* - y) - [E(p^*, u) - E(p, u)] \qquad \text{(A.1)}$$

where u is utility, p the price system and the asterisk indicates the reform. The first term, $y^* - y$, measures the gain (or loss) of income caused by the reform. The second term measures the disposable income which is needed after the reform to obtain the same level of utility as before the reform.

Economic Policy Instruments

The models also incorporate a large number of economic policy instruments: production subsidies (by activity), consumption subsidies (by product), valued-added taxes (by activity), other indirect taxes (by activity), tariff barriers (by imported product, according to origin), non-tariff barriers (by imported product, according to origin), direct taxes (by household) and corporate income taxes. These instruments are modelled in traditional fashion, by considering each of them as a tax on the base concerned. For example, a production subsidy is modelled as a negative tax on the production price. One more instrument is available to the authorities: public

expenditure. The degree of disaggregation of expenditure (current expenditure, transfers, civil service wages, etc.) depends on the model's specification. Using this instrument for alternative policies, however, creates a tricky analytical problem: how to measure public expenditure (which is not incorporated in the household utility function) in terms of well-being. Apart from simulations of fiscal compensation in Tunisia and changes in government wages in Egypt, we preferred not to test the impact of a change in public expenditure, because of the uncertainty surrounding the consequences of such changes for the well-being of households.

The Tunisian Model

The CGE model for Tunisia is calibrated from information contained in the Tunisian social accounting matrix for 1992 (Chemingui and Dessus, 1999). It includes two representative Tunisian households, one rural and one urban, and one tourist household. The latter receives all its income from abroad and consumes all of it. Fifty-seven economic sectors are taken into account, as well as five types of labour, distinguished by their level of skill and geographic mobility: three in rural areas, one in urban areas and one throughout the country. The latter, which represents casual workers who react quickly to fluctuations in labour demand, acts as a buffer between rural and urban areas. If demand comes from urban areas, for example, these workers move to the cities and transfer a fixed proportion of their income to rural households. Thus they dampen shocks that are specific to one geographical area, such as a change in agricultural policy.

The model incorporates three types of capital: physical capital, reserves of natural resources (oil and phosphates) and land. The last is differentiated by whether or not the crop is perennial, by the extent of irrigation and by the varieties cultivated (when they are specific, as in the case of dates). Finally, the model distinguishes between two Tunisian trade partners: the European Union and the rest of the world. A detailed list of the model's dimensions can be found in Chemingui and Dessus (1999).

It was necessary to fix some variables for the reference scenario. We used an average annual growth rate of 5.7 per cent between 1998 and 2010, in accordance with the aims and forecasts of the ninth economic and social development plan (Ministère du Développement économique, 1998). Average annual population growth for the same period is 1 per cent and 1.8 per cent in rural and urban areas respectively. The labour supply increases by 0.9 per cent a year in rural areas and by 2 per cent a year in urban areas between 1998 and 2010. The proportion of irrigated land increases at the expense of that of dry land: the area of the former increases by 1 per cent a year until 2010, causing a 0.8 per cent annual decrease in the latter. The total cultivated area does not change. The surface area allocated to tree crops and forestry products remains unchanged, as do reserves of natural resources. Average land productivity increases by 2 per cent a year as a result of agronomic research on varieties and agricultural techniques.

It is assumed that the government continues its fiscal stabilisation policy. Fiscal expenditure (excluding investment) increases by only 1.5 per cent a year until 2010. In the reference scenario, fiscal saving is endogenous. It is maintained at its reference level in the alternative scenarios by adjusting the VAT vector. In order to neutralise the distortionary impact of a change in VAT (Rutherford, Ruström and Tarr, 1995), we assume that VAT rates are progressively harmonised between 1998 and 2010. In 2010, there is a single VAT rate, applicable to all products and equal to the average rate collected in 1992, namely 3.7 per cent of output. Other domestic taxes remain unchanged.

The other economic policy changes incorporated in the reference situation reflect Tunisia's formal commitments to the international community, particularly where trade is concerned:

Under the GATT:

i) Ending non-tariff barriers on agricultural products from 1995.

ii) Reduction of agricultural tariffs (consolidated in 1995) by 24 per cent between 1995 and 2004 for all trading partners.

iii) Reduction of agricultural subsidies by 13 per cent between 1995 and 2004.

Under the partnership agreement with the EU:

i) Reduction of tariffs on imported European industrial products (differentiated by product — see Table 2.9), between 1998 and 2010.

ii) Changes in quotas and preferential tariffs on some Tunisian agricultural products (beverages, citrus fruit and vegetables) exported to the EU, between 1997 and 2001.

In the context of the dismantling of the Multi-Fibre Agreement

Loss of Tunisian market power in Europe for its exports of textile products from 2005.

Policy changes, the level of economic activity and the level of public expenditure determine the fiscal balance of the reference scenario before public investment, which remains stable throughout the period at +4.5 per cent of GDP. The growth in total factor productivity (for physical capital and labour only) is also determined endogenously in this first scenario. The annual increase in total factor productivity attains an average of 0.8 per cent between 1992 and 2010, for 5.7 per cent annual GDP growth and an initial stock of physical capital equal to twice the 1992 GDP. Finally, we assume that the external constraint becomes more rigid. In 2010, the trade deficit is reduced to 2.6 per cent of GDP, compared to 13.6 per cent in 1992. Foreign prices remain unchanged.

The Egyptian Model

Two versions of the Egyptian model are used. In the first, the sectoral dimension is disaggregated to the maximum extent possible, into a total of 30 sectors. The second model, which is more concerned with the Egyptian economy's capacity for reallocating labour, is more aggregated and distinguishes between 14 sectors. For the detailed list of dimensions in the two models, see Dessus and Suwa-Eisenmann (1998 and 1999).

The models were calibrated using a social accounting matrix for the Egyptian economy in 1995. The latter was obtained by updating the social accounting matrix for 1992 (CAPMAS, 1997) using the 1995 national accounts. The updating procedure is described in detail in Dessus and Suwa-Eisenmann (1998).

To construct the reference scenario, we drew on the baseline scenario used by the World Bank (1998*a*). This scenario assumes that the Egyptian authorities maintain sound economic policies which continue to achieve results with respect to stabilisation. No structural reform is undertaken, but some factors do tend to cause structural change in the Egyptian economy. First, we assume that the fiscal deficit is reduced through stabilisation of government expenditure. The decreased inflow of foreign saving is compensated by domestic saving, which increases because of a fall in the dependency ratio (ratio of non-working to working population): the population is assumed to grow at an average rate of 1.7 per cent a year until 2010, while the working population increases faster, at 2.7 per cent a year.

We assume that the traffic capacity of the Suez Canal is limited unless massive investments are made. Following the World Bank, we also assume that discoveries of new oil reserves will be modest in the future, so that existing reserves will decrease by 1 per cent a year until 2010.

We make the further assumption that in this environment average GDP growth will be 6 per cent annually between 1998 and 2010, that is, the average annual growth observed in Egypt over the last 30 years. This assumption enables us to determine the average increase of total factor productivity compatible with this growth. If it is assumed that the ratio of the physical capital stock to GDP was 2.4 in 1995, then average annual growth of total factor productivity is 1.1 per cent between 1995 and 2010, which is close to what is observed for the period before stabilisation, from 1966 to 1990.

The external environment — world prices in our "small country" model — remains unchanged and is not significantly affected by the implementation of the Uruguay Round agreements in the areas that concern Egypt (Shiells *et al*., 1996; Hoekman and Subramanian, 1997), nor by the signing of association agreements by other Mediterranean partner countries (see Chapter 2).

The dismantling of the Multi-Fibre Agreement by the year 2005 will probably have a greater effect on the external environment of Egypt's economy in the dozen years to come, but its consequences for Egypt itself remain somewhat unclear. The textile industry seems to be only slightly constrained by the preferential export quotas

on the US and European markets. The industry's future prospects will depend its ability to compete with other developing regions, notably South-east Asia (Kheir-El-Din and El-Sayed, 1997). In light of this uncertainty, we decided to model this effect neutrally, using an approach similar to that used for Tunisia. Our treatment gives Egyptian textile exporters limited market power on the markets of the European Union and NAFTA until 2005, at which point this power disappears and the assumption of exogenous world prices is used, as for all other products.

With respect to imports, Egypt's commitments to the WTO under the GATT do not seem to be constraining for trade policy, since the tariffs adopted in 1995 were below the levels that Egypt is bound not to exceed (UNCTAD, 1998). Thus we assume in the reference scenario that Egypt's trade policy remains unchanged between 1995 and 2010.

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